FOGHORN

THE MONTHLY CP/M PUBLICATION OF **FOG**

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LETTERS

AMO #6 Donates to FOG — Challenges all AMO's

The Microcomputer Users Group of Solano and Yolo (MUGSY), FOG AMO #6, is returning to you our last rebate check of $150. Please consider this a donation to FOG.

Our group is extremely sorry to hear about the financial woes that are plaguing FOG. We guess it was inevitable, given the state of the computer industry.

Please consider publishing this letter in the ***FOGHORN*** and ***FOGLIGHT***. It is our hope that this will start the ball rolling with the other local FOG groups. Each of us have received much more benefit from FOG than our small dues paid for. We are working on other fund raising ideas. You can count on us for additional donations, once we get this thing organized.

You may hold our future rebates until further notice. We wish you all the best. We are confident that FOG will be back on its feet soon, and we will do everything we can to help.

It's times like this that test the loyalty of the membership. We are confident that the membership won't let you down.

We would like to issue this challenge to the other local groups. **We think our 60 member group can raise more money for FOG than any other local FOG group.**

Well, any takers?

Lloyd Chan
AMO #6

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Thanks, THOUGHTLINE, & the Trantor Hard Disk

Thanks once again for all the fine articles. Like so many have said before, I hardly put the magazine down until I have finished it.

I recently purchased THOUGHTLINE from SPITE Software. I have used it several times and think it is very helpful. It is so much like WordStar that it is easy to use and helps in organizing my thoughts and my day. They promised more added to it later and I can hardly wait.

I use an Osborne Executive on a Trantor hard disk with a WEB from WESTWIND and have had mostly good service from this equipment. The few problems experienced have been solved in house with a purchase of one tube and one keyboard.

I put in the new chip myself (thanks for the new posts) and repaired a problem with one of the floppy drives.

Mac Fehsendfeld
Indianapolis IN

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Hats Off to EPOXLINK and Thoughtline

Just a brief note to thank you for finding and then sending from your library the program EPOXLINK to allow file transfer to and from my Epson Geneva, PX-8 laptop computer and my Osborne Executive.

It is so simple (two commands) and it transfers to and from the commands that are present in the Portable WordStar provided with the Geneva.

I had spent about 20 hours trying to get a modem program and modified cables to do the job. With this program, using the 725 null modem cable from Epson the job is done at 19,200 baud.

I purchased Thoughtline, an outline processor from Spite Software after returning my impossible KAMAS program to them for their rebate offer.

As I have an Executive with the old BIOS they kindly sent me two patches to make it work, and it is wonderful. I cannot think of anything that has been so useful since word processing and spread sheets.

Commands are simple and generally follow a WordStar format. An outline is begun with the hierarchy of items raised or lowered by tab or escape keys. If one writes beyond 60 columns, it automatically kicks into word processing for text until you want to return to outlining, when UD hides all but the first line of the paragraph.

Sections of the outlines may be cloned, i.e., repeated in other categories elsewhere in the outline. Modifications of one part of the cloned item are simultaneously changed in the other.

Sub-categories are easily hidden and categories are easily prioritized with simple two stroke commands. Files can be written in a number of forms but mainly can be written to disk so that the work can be finally processed with WordStar.

I can't think of any program that is so utilitarian or flexible on a daily basis as this one. I only wish I had it on my Epson laptop.

Byron A. McBride
Milwaukee WI

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Elite now Works on My Printer Thanks to *FOGHORN* Tip

How great FOG is! Many thanks to Richard Hopkins (*How I Broke the Code on SETUP's Printer Initialization String,* ***FOGHORN***, March 1986).

Until Richard pointed out the use of **^H** to represent decimal 8 in two digit escape codes, I thought Elite was not available on my Gemini printer.

My Gemini 15 want to see <**ESC**>**B^B** to do what the manual says is <**ESC**>**2**; and they gotta be capital B's.

I always said anyone who is named Richard, is a pilot, owns an Ozzie or reads the ***FOGHORN*** can't be all bad!

Richard Stelter
Cypress CA

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Ramblings About the March 1986 *FOGHORN*

(1) To John Michael Williams (page 10): WordStar's speed seems to be inversely proportional to the line length. Very long lines make it run at a snail's pace — apparently WordStar counts all the characters on the line each time it moves the cursor! This is probably why MicroPro limits the right margin to 240, even though there is no limit on actual line length.

Also, when DATTIM.COM asks for the time, this is not completely useless. If you supply the correct time, the date is supposed to change automatically when you work through midnight. In other words, DATTIM.COM creates a clock — it doesn't just store the date you supply.

(2) To Keith Conover (page 11): NOTHING that's memory-mapped works with the Osmosis 80-column board, which responds only to the CP/M terminal driver. That's why SuperCalc 1.12 won't work with Osmosis, whereas the earlier 1.05 version (which uses the CP/M terminal driver) will.

There MAY be a good side to this. IF the Osmosis 80-column board releases the 4K of RAM that Osborne devoted to the video map, then PERHAPS those few CP/M programs that won't run on a normal Osborne because they need a little more RAM might work with the Osmosis board. Perhaps someone who has this board could team up with a hacker who knows how to use MOVCPM.COM, and test this hypothesis.

(3) To Charles Sandercock (page 14): To get your whole directory sorted, keep either SORTDIR.COM or SAP.COM (both in the FOG library) on your WordStar disk and run it from time to time.

These both read the disk directory into RAM, sort it and then write it back to the directory track. Thereafter, a plain DIR will show the files alphabetically.

SAP.COM destroys all remaining traces of the location of any files that were previously erased, so you can no longer recover them with UNERA.COM. It also destroys files of size zero K, although the latest versions of SAP.COM preserve "empty" filenames beginning with a "-" character, which many people create for use as volume labels.

SORTDIR just moves the erased filenames to the end of the directory; they remain erased, but CAN be recovered with UNERA.COM. Also, all empty files are retained. SORTDIR also provides a report about the disk, telling you which of your 16 "user areas" (CP/M's subdirectories) are in use.

At least one of these two programs will run from the **R** command on WordStar's opening menu. If you clean up the directory this way before each session of work, all new files added this session will appear at the END of the directory.

If anyone DOES supply the patch to let WordStar sort more filenames in its directory, please publish it in the ***FOGHORN***. Personally, I'd like to try a WordStar that would not sort the filenames at all, but just list them "as is". That way, in conjunction with SAP or SORTDIR, I could always find today's new files, since they'd be at the end of the list.

(4) To Sergio Samoilovich: It's true that some printers, such as Okidata, can't backspace; but if you install WordStar as a "non-backspacing standard printer" it handles ^PH by making a second pass across the line. Thus, ^PH is still useable in WordStar even though ^H has no effect when sent from other software.

(5) To P.A. Pardoe (page 18): Yes, my review of Rembrandt was "scathing", but please bear in mind that the Rembrandt which YOU purchased and enjoyed is NOT AT ALL the same product I reviewed. There are different (incompatible) versions of Rembrandt for several computers. The version for my Osborne 1 produces the worst results, while that for your Osborne Executive makes full use of your software-definable graphics characters to produce just about the best results of them all.

The tone of my review could perhaps have been different, but I stand by my main conclusion: the results from the Osborne 1 version of Rembrandt (and Osboard before it) are not usable for business. Osboard, however, had some utility as a tool for freehand sketching; Rembrandt discarded Osboard's 1-to-1 keyboard mapping of graphics characters — a major step backward; Rembrandt's ability to draw crooked circles with gaps, and repeat them endlessly, does not compensate for this loss of utility. It takes a LOT longer to draw anything practical with Rembrandt, since you can work with only 10 graphics characters at a time and must constantly remember to which keys YOU mapped them!

Until Spectre remedies this with a new version, they could include the original Osboard along with Rembrandt, and let the user choose whichever seems best suited to the task at hand. Since I had to return my original Osboard disk to get the "upgrade", I'm now using the backup of it, while my Rembrandt disk sits on the shelf waiting to be returned for the next upgrade — AFTER I see a convincing demonstration!

Alan T. Chattaway
Vancouver Canada

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Circuit Alterations to the Osborne 1

In ***FOGHORN*** Vol V No. 5, Steve Porter asked us for help with some circuit alterations. You told us that the Osborne 1 will only easily address three drives due to hardware implementations. I think that you are wrong.

Like any other CP/M computer, the Osborne 1 is able to address up to 16 drives. To achieve this you first have to make some alterations to the disk electronic board. This is absolutely necessary because the factory-installed DD electronic board only has two drive select pinouts (drive select 1 and drive select 2).

I'm not able to provide detailed hardware tips. From a logical viewpoint, it should be easy to expand the factory-installed DD electronic board so it can serve four drives. Within the BIOS you have to locate one disk parameter block (DPB)

cont. on page 7

THE NEWEST FROM NUEVO...

AN INTERNAL HARD DISK FOR THE O-1

*21 Meg, configured as four logical drives of 5.1 Meg each
*Internal or external mount
*Boots automatically at power-up
*Interfaced to computer via a true SCSI port

The O-1 hard disk package consists of a Nuevo host adaptor board (SCSI port) that plugs into the Z80 socket and a Rodime hard disk drive with integral controller card. For internal mounting the hard disk will replace one of the floppy disk drives. For external mounting a FDD enclosure with power supply is required. Support software is naturally included.

Introductory Price---$795
External Enclosure w/Power Supply, Cabling---$80

AND DON'T OVERLOOK THESE GREAT BUYS...

NUEVO ESU EXECUTIVES---$995 & up!

A brand new Executive with a Nuevo double-sided upgrade installed here at the factory. This super Exec recognizes over 30 disk formats automatically. An 8Mhz Z80 makes it twice as fast as the original. Twice the original memory is standard, four times is optional at minimal cost. See previous FOG issues for more details and available options.

NUEVO 80 COLUMN UPGRADE---Only $200

Increase your standard screen size to a full 80 columns. Easy to install. One customer wrote that his 13 year old daughter installed his second unit. Excellent resolution, even on the internal screen. Six software selectable cursor styles. Optional Baud Rate Generator (add $30) provides 16 baud rates from 50 to 19.2K baud. No soldering unless BRG option installed, then only one connection.

NEW LOW PRICE ON THE DOUBLE DENSITY UPGRADE---Only $99

Our advertised price will never be lower. We sold literally thousands of these at $150 but it's getting so that there are darn few single density O-1's left! The Double Density Upgrade and the 80 Column Upgrade were the very first products ever to receive the endorsement "OCC Factory Approved Accessory". This board is all digital and has two sets of drive connectors, one for the unique factory drives and the other for industry-standard drives. Good insurance as factory drives get harder and harder to come by.

O-1 & EXEC FANS---ONLY $25!

A cooling fan is one of the best investments you can make for your computer. This fan came standard with the Exec and was optional with the O-1. Originally sold for several times this amount. Quantity pricing available for 10 or more units.

SPECIAL OF THE MONTH

A brand new Osborne One with factory double density and Nuevo 80 Column Upgrade installed for only $595. This offer valid for orders placed between 7-1-86 and 7-31-86 only and limited to stock on hand.

Prices and specifications subject to change without notice. Actual shipping charges added to all orders.

NUEVO ELECTRONICS CORPORATION
P. O. Box 209/Richmond, Texas 77469/713 341-6001

per drive that you want to address. Use the library disk - FOG/CPM.008 to learn how it works.

The power supply is the third problem. You may use an external power supply like NUEVO does (model EX4, EX9).

If you want to address up to 16 drives you have to figure out your own disk electronic board. Then it would be possible to connect up 8″ drives or 3-1/2″ drives to the Osborne 1. (I'm interested in any solution.)

As you see you can do much work in upgrading the Osborne 1. I'd be glad to see some useful tips in the future ***FOGHORN***'s.

Thanks to Jim Dunn. His tip was very useful to me (*A True Hardware Reset for the Osborne 1,* ***FOGHORN*** Vol. V No. 3).

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About Rembrandt and Spectre Technologies' First Rate User Support

Regarding my review of Rembrandt in the January 1986 ***FOGHORN*** (page 34), I received a most kind letter from Dave Grenewetzki from Spectre Technologies.

Now writing a letter all the way to Finland to one single customer is what I call user support!

In addition to comments on the review, he replied to my questions about why my Rembrandt printouts (from my Kaypro 10 on my Gemini-10X) were unsatisfactory, while my earlier Osborne 1 version of the same program printed very well with the same printer.

Grenewetzki and his technical support staff offered several suggestions as to what might be wrong.

As it happened, none of them were correct. The reason was that Kaypro Europe in Holland in its infinite wisdom decided to rewrite the Kaypro BIOS, which effectively prevented the eight bit from being sent to the computer — a fact Mr. Grenewetzki could not have known. I had my BIOS modified by my dealer, and now Rembrandt prints BEAUTIFULLY.

The main point, however, is that Spectre really seems to shine when it comes to user support. So I cannot agree with at least some of Alan Chattaway's complaints about Spectre's lack of user-orientedness (***FOGHORN*** September 1985), though he of course was looking at the company from a very different point of view — comparing the old package with the new one.

Several computer users in Finland have had rather sad experiences with American software houses. I have even heard of checks being cashed but no delivery made. I have been spared, so far, but then again, I have been fortunate enough to deal with firms like Spectre Technologies.

Regarding my review of Rembrandt, Mr. Grenewetzki pointed out that the custom label problem has been fixed. It has — I tried it on my Kaypro version. The SuperCalc loading problem (see my January review) was another kettle of fish altogether.

It seems that the SuperCalc loader module looks for the original border markers, i.e., the character ¦. As that character is a letter in the Scandinavian alphabet, I reinstalled the border marker as the colon (:), and that is what had caused the problem. But of course, as I pointed out in the January review, the figures were loaded correctly anyway.

Harry Hawkins's MBASIC discovery (***FOGHORN*** March 1986) taught me a valuable lesson. I had a letter published in the July 1985 ***FOGHORN*** in which I told about the same discovery. And the lesson to us contributors is: always make an issue about your finding. I merely mentioned this in passing, so it probably went unnoticed by many readers. I keep rereading ***FOGHORN***'s and keep finding useful tips again and again.

WordStar 3.3 on my Kaypro 10 does not reset the arrow keys to CP/M on exit. I have solved this by modifying George Joseph's KEY.ASM (***FOGHORN*** July 1984 and notes on Kaypro, ***FOGHORN*** February 1985).

I split KEY.ASM into two different programs — CPARRO and TBARRO (which sets up my arrow keys for the TURBO Pascal editor). I run CPARRO.COM after each session of WordStar, and my arrow keys are always configured correctly. I quit my WordStar sessions with a SmartKey command: **X A: USER 0↵B:CPARRO↵**, and am always in command of what is happening.

I did try to modify Keith Conover's patches, originally written for the Osborne 1 (***FOGHORN*** January 1986), but without success. I suppose it has something to do with my UNISUB patches. If any of you out there in Kaypro country know the answer, I sure would like to read about it.

As an aside, Dear Editor, do you REALLY get so few Kaypro-related articles as it seems from the number published? I know that in addition to myself (and I AM dubious as to the usefulness of my OWN contributions) there are Kaypro users in Finland at least who have contributed to ***FOGHORN***.

I love this publication, but please, dear readers, let's have more Kaypro, Televideo, Morrow and what have you on the pages of ***FOGHORN***. Let us show this is not MERELY an Osborne publication. Of course the general articles on WordStar, dBASE etc., are most valuable to any of us.

I have placed my TURBO Pascal on USER 4, and move there with the command **EX TURBO.SUB↵**. The public domain EX14 is necessary, because with it you can move from one user area to another which SUBMIT.COM will not do. My TURBO.SUB file (written with VDO, though you could just as easily use WordStar's N-option) is as follows:

```
A:↵
USER 4↵
TURBO↵
y↵
xtbarro↵
lb↵
d↵
↵
```

You will have to modify USER 4 according to where you have placed your TURBO Pascal. I suppose you have also noticed that when exiting TURBO will ALWAYS return you to USER 0.

This SUBMIT file will make sure you are logged on Drive A, then move to user area 4 and load TURBO with error messages. Then it will execute the program TBARRO.COM, which I have placed on Drive A: USER 4 and which configures my arrow keys for WordStar (and the TURBO editor). Then it will log to Drive B and display the disk directory — all with one simple command. There is some screen flicker, but you needn't watch the screen all the time.

Well, that's all for today. Keep up the good work, everyone.

Veikko Rekunen
Finland

[The answer to your Kaypro question is "yes". We make a point of using all material on other systems that is submitted because the ***FOGHORN*** *is a universal CP/M publication, not an Osborne-only one. I concur with Veikko's comments; if you own or use systems other than Osborne's, please send in contributions.* Joanne]

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About Media Master Plus*[Below are firstly a copy of a letter sent to Intersecting Concepts and then their reply.]*

To Intersecting Concepts:

In November, 1985, I ordered and received an IBM version of Media Master Plus as described in the ***FOGHORN*** publication. Today (March 20, 1986), I received a multiple leaflet mailing from you which promotes the same misconceptions.

For example: The Spec Sheet for Accelerate 8/16.

First — no mention anywhere that only 8080 CP/M programs will run — that accounts for 200-400 novice type utilities. Then along came the Z80 chip and CP/M became better than Apple or TRS80. Contrary to statements elsewhere, WordStar, dBASE II do not run under ZP/EM on MS-DOS machines.

Second — since Osborne, Kaypro, Morrow, et. al., all started by using SSSD disks, I assumed (should have read the fine print), I could copy my OS-1 SSSD data over to MS-DOS. Surprise. My Leading Edge, Model D, MS-DOS disk drives will read SD but Media Master only looks at Cromemco CDOS, TRS80 w/ Omikron (?), and Xerox 8201 and then won't convert to MS-DOS.

My request? Please take me off your mailing list until you can do something realistic for me — like not selling the V20/8080 chip.

Merril Esher
Tempe AZ

From Intersecting Concepts: I'd like to thank the folks at FOG for giving us the opportunity to respond to Mr. Esher's letter and would like to address each of his assertions in sequential order.

First, Accelerate 8/16 and Media Master Plus spec sheets do point out that the CP/M emulation is 8080 only. Under the Technical Information section, the Accelerate 8/16 spec sheet reads "ACCEL uses the 8080 mode of the NEC V20 processor to emulate CP/M software at an equivalent processor speed of approximately 3 Mhz". It is also mentioned in the ACCEL features section. In the Technical Information section of the Media Master Plus, the third paragraph reads "ZP/EM emulates an 8080 processor to execute CP/M software at an equivalent processor speed of 1 Mhz". It also mentions this in the ZP/EM features section of the spec sheet.

In addition, our advertisements state that Media Master Plus uses 8080 instructions. To quote from our most recent FOG advertisement: "The results are amazing: CP/M programs using 8080 instructions and data can be transferred from popular computers like Osborne, Kaypro, and Zenith to run on MS-DOS and PC-DOS machines!"

Second, we do run dBASE II versions 2.3A, 2.41, and 2.43. Version 2.3B contains Z80 opcodes and thus will not run. In addition, we have run WordStar 3.3 (several other versions have been run by our customers), and have found that versions that have not been "patched" to directly access video memory or keyboard hardware function properly. The best approach is to use the WSU.COM program as a basis for installing WordStar for particular terminal characteristics.

Finally, the reason that none of the disk format conversion programs on the market support single density on the IBM-PC is that the hardware is preconfigured for double density operation; it is not possible through software to program the disk controller for single density operation. The formats Mr. Esher mentioned are not listed as available options in the IBM-PC version of Media Master for that reason.

From Mr. Esher's description, it sounds like he was unable to successfully run any of the programs he tried; this usually is an indication of some error in usage of the program that can be corrected with our assistance. If we are unable to help a customer obtain satisfactory performance from any of our products after we have have done our best, we always offer a full refund.

To the best of my knowledge, Mr.Esher has not contacted us for support or a return authorization. Those options are still available to him.

Mark Graybill
President, Intersecting Concepts

* * * * * * *

Vixen Notes, "the Ultimate Disk?" and a Plea

I have had a Vixen for about a year now, and am thoroughly impressed. Not one BDOS error (except for human error like not having a disk in the drive!), and it runs just about everything my Osborne 1 ran (or still runs).

I use the machine about 20-30 hours per week, so I think I've given it a pretty good workout. As a matter of fact, Personal Pearl is the only software I've been aggrieved with, and unfortunately for us who don't have the upgraded INSTALL program, it seems the fix for clearing the screen is a foregone item.

I'd like to get a communications system going, but my modem, a Volksmodem just doesn't like to talk to my computer (remember the TV ad about "its just as good as a Xerox?", then substitute a Hayes Smartmodem and you know the problem!). Oh well, I suppose it'll all work out eventually.

The only physical complaint I have about the Vixen is the power cord. It sure is a pain to fold it up just so when you're in a hurry. I have had the back pop off several times while carrying the Vixen around, and out goes the cord.

The keyboard arrangement is fine for me, I got used to the new arrow location in just a few days, and don't really miss the keypad even though I enter a lot of numbers in my work.

It would be great if a Drive C was available for the Vixen, especially on an internal mount with battery backup built in. I wonder if there's room for such a beast? I haven't had to open my Vixen up yet.

The double sided/double density format is excellent. I have been able to construct a master disk that allows me to do just about everything I could possibly want to do if I take the computer on the road and don't want to carry around a lot of disks. My master disk is set up as follows:

PROGRAM

SC2.COM, .OVL, a 2k dummy .HLP file and INSTALLS.COM
WS.COM (and overlay files, no mailmerge)
SUPER.COM (SUPERFILES and the utility file SUP.COM)
MBASIC.COM
MEDIA.COM (Media Master)
MYTERM.COM (and about 5 .PAR files)
OSBOARD.COM (and the OKIPRINT.COM printer utility)
OSUTIL.COM (which I've renamed START.COM)
NSWEEP.COM
SYSGEN.COM
PIP.COM
MAKE20.COM
COPY.COM
SETOKI.COM
TELL.COM
SETUP.COM
DUU.COM

Special Function Key ASSIGNMENT

^1 SC2
^2 toggle arrow keys to WS and loads WS
^3 SUPER
^4 MBASIC
^5 MYTERM
^6 OSBOARD
^7 START
^8 SETOKI for 17 CPI
^9 SETOKI for 12 CPI
^0 toggle arrows, useful when leaving WS to reset arrows to CP/M

All this with 12K left over if I need to use Drive A for some storage. With this setup and about five disks with files related to the various programs, I can do word processing, spreadsheets, graphics, write programs in BASIC, utilize a number of CP/M utilities including formatting, copying and repairing disks, squeezing and unsqueezing files, file transfers and user area assignments, computer diagnostics, formatting and reading "foreign" disks, data base management via Superfiles, and eventually communications. It sure seems like a mouthful to me!

Now to the "PLEA" part of this letter. Would it be possible for the ***FOGHORN*** to run a series of articles on assembly language?

A way to kill two birds with one stone would be to show how to set up the MDM740.ASM file for a particular modem (or number of modems) for the Vixen. Since the Vixen is the newest computer people would be wanting to interface with a modem, a number of people are probably as thumbsy as I am when it comes to understanding the what and how of ASM files. As well, more people would really benefit from the information on interfacing modems.

I realize articles have been printed on various modems, but a beginners' level article, especially concentrating on just what the various ASM commands do and how the ports work has to be a worthwhile venture.

The FOG and ***FOGHORN*** are by far the best help available to CP/M computer operators, and has the best price for the information available. Every issue is a joy to read and I thank everyone for their hard work.

Jerry Michels
Amarillo, TX

[To answer your "plea" — Sure! But ***FOGHORN*** *only publishes what the membership sends in. So if someone reading this wants to take on a tutorial — please, be our guest! Jack]*

* * *

Help Needed with Magic Wand Word Processing Program

Please run this plea: does anyone in the FOG membership have a copy I can purchase, or know how to adapt a copy of the word processing program, Magic Wand, to the Osborne? (The earlier version by Small Business Applications, of Houston would be preferred over the later Peachtext variation.)

The Osborne is my second computer; the first being a Zenith Z-89, on which is being written. It uses a modified Magic Wand, which is the best word processor I have come across. It is transparent, in that it lets me concentrate on what I am writing, rather on whether I know the right control keys, or on whether I am in overwrite or insert mode, etc.

The Ozzy was my first contact with WordStar — which I find frustrating. For example, because the Ozzy screen holds about 50 characters, that is the margin setting I prefer. I find it disconcerting to only see part of a sentence on the screen at a time. I want to be able to read the whole thing, so the scrolling left and right is annoying.

But I want to print it out at about 75 characters a line — about the right width for a letter.

Magic Wand operates in this manner: it has an editor and a printer, i.e. two separate programs. In edit, Wand's command screen lets you set the line length for screen editing at any length, e.g., 50 characters. From then on, all text is typed on a 50 character line.

When I want to print it, I leave the editor and call up the printer, which lets me set a new line length — in this case 75 characters — and away I go. The text is printed that width.

Now with WordStar and Ozzy: the margin is set at 50. To print, I must go back and reformat, (or whatever the correct term is for **^QQB**) the entire text to set it at the measurement for the printer. Not only that, but in correcting text, I find that WS ignores its 50 character margin, so that I am constantly reformatting paragraphs. Instead of concentrating on what I am writing, I end up concentrating on WordStar functions.

A further unsettling feature of WordStar on Ozzy is that it will suddenly drop a line without warning.

Enough said: I prefer Wand, and if I could find a variation for the Ozzy, I would find my No. 2 computer more usable.

May I also add my comments to the debate about CP/M and MS-DOS operating systems? I am certain that those people who need large memories would prefer MS-DOS, since those machines have a greater capacity, but for most applications for the average person, the 64K limit of the Z-80 processor is adequate, and CP/M is an excellent operating system.

I have trouble understanding why so many people have written it off, when Apple II, with its less sophisticated 6502 processor, and less sophisticated operating system, is still a great seller on the market.

From what I can gather from bulletin boards and magazines, MS-DOS is more confusing and harder to operate. Whenever you see the words "more powerful", the writer usually means more difficult to master.

For my two cents, IBM's PC-DOS and MS-DOS are largely responsible for the downturn of the computer market. How many executives have these "powerful" machines that are too complicated to learn to use easily and therefore sit idle? And how many of these executives are going to buy more of these machines for their employees? The proof here is the demise of so many small support companies and computer magazines. Fewer people are showing interest in them.

Finally, I recently added a MacIntosh to my collection for its graphics capability. But for writing a letter, it is so slow and frustrating. And it takes forever to boot, forever to print out — all at a terrible cost of my time.

On the Zenith, I can send 100 customers a letter at roughly one copy a minute — actually the two old machines, (the printer being a Diablo 1620) — can go faster, but I have them handshaking at 300 baud.

The Ozzy with WordStar — the "more powerful" word processor -- can do the same job in about a minute and a half per copy. Far slower. The MacIntosh can't even begin to keep up, taking almost two minutes a copy!

My observation: the bigger and more powerful the processor, the slower the process.

I enjoy ***FOGHORN***, and I don't mean to offend those who have, and like, WordStar. If that is your preference, good. But I have no such sentiments of those supporting IBM and compatibles. I can find no evidence where Big Blue did anything to improve personal computers. Instead they improved their profits at the expense of a lot of deserving pioneers.

Thank you for your service, and I look forward to reading ***FOGHORN*** for another year.

Wayne Roberts
Saskatoon Sask

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Great job COMPUMAGIC

I would like to apologize to COMPUMAGIC — makers of such all-time classics as CMAUTO+, MAGICDIR, MANYKEY and the newest release, the COMPUMAGIC UTILITIES package.

I had a a problem on my Vixen with one of their useful programs on the MAGICDIR disk called ^F.COM. When the people at COMPUMAGIC read about my problem in the ***FOGHORN*** they showed warm and personal concern and immediately sent me a letter stating that the problem had already been fixed in a new program on the COMPUMAGIC UTILITIES package called SCREEN.COM.

This program can send everything that comes to the screen to a named file. This is very useful for programmers and documentation writers.

Great job COMPUMAGIC. I wish all of the software companies offered such personalized support.

Gregory L Smith, MD, MPH
APO New York NY

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Request for More Documentation

I would like to request that submissions to FOG (or at least some of them) be a little more complete in their documentation.

I find myself unable to implement many Assembly code routines for lack of good examples on how to start the process to implement what is shown. With a few good examples I could, in time, learn what is assumed.

Even then, this is a very good, very useful magazine. Without it my computer would not have been worth anywhere near what is has proved to be, thanks to your help.

Dave Crouse
Lufkin TX

[There have been examples given for most of the patching programs in past issues. That is not to say that "at least some of them" (submissions that is) could not be a little more instructive without including a complete tutorial about the patching programs being used. Thanks Dave. Ed]

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NOVICE NOTES

The first steps for those starting out.

Questions and Answers on Disks

by James A. Sinning

Question 1: I have heard that there is no difference between single sided and double sided disks. Can I use single sided disks on my double sided drives. Will it hurt the drives? What will it require to do this?

Answer: Most magnetic media, i.e. the disk part of a floppy disk — the part inside the outer cover, is made by one of a very few manufacturers. Thus many of the brands of floppy disks that you can buy are actually the same media with a different jacket and a proprietary label.

There are differences between brands that use the same media; these are in the quality of the jacket, the packaging, etc. There are also differences in the quality control in assembly.

What is different between single and double sided disks is usually not the media, but merely the verification process. That is, double sided media is certified to be error free (when it is packaged) on BOTH sides of the disk while single sided media (usually identical with double sided media) is only certified on one side of the disk.

The chances are excellent that the other side will be perfectly good. If you do the "certifying" yourself, you can save money by buying single sided disks for your double sided machine.

You can use a program such as FBAD60 or CERTIFY (on FOG/CPM.020) to certify the disk yourself. Note that this certification may not be as complete as a factory certification because you can only "certify" the portion of the disk that is written on and not the gap area that must be left between tracks. Some manufacturers certify this "gap" area and others don't.

If the disk passes muster on your machine with FBAD60, it will likely pass on other machines as well. In any case it is perfectly usable on your machine.

Note also that the formatting process does a verification after formatting, and this obviates the need to separately "certify" the media. What FBAD or CERTIFY will do is lock out any bad sectors by writing them to a file that is never accessed so programs will not try to use the bad areas. This is not necessary if there are no bad areas which will be the usual case.

So go ahead and use single sided media with your double sided drives. It will not harm the drives and it requires no special technique in most cases.

Question 2: Is there really any difference between brands of disks? Are the "cheapies" any good? Is the cost of "premium" brands justified?

Answer: Yes, yes, and maybe. There are definite differences between disk brands. There are both visible and obvious differences (jacket quality and packaging) and invisible (to the naked eye; at least) differences.

The invisible differences are in the quality of the magnetic material (how well it retains a magnetic field), how easily magnetized and demagnetized it is, and how stable the film and binder is to abrasion (such as a disk head dragging across it for HOURS) and dimensional change (expansion with heat until the tracks are no longer under the head).

In addition, there are differences in the mylar base upon which the media is coated. Even though there are only a few makers of magnetic media, there are lots of media packagers (under whose name you buy the disk). They use better or worse quality jackets. Cheaper jackets are usually more flexible (thinner) and may not be as accurately folded and sealed. Such jackets are more likely to make noise when the disk rotates. In extreme cases they might have enough friction to alter the speed at which the disk turns and cause read/write errors.

However many of the cheaper more flexible disks are good buys and will provide excellent service. Remember that the drive read/write head rides on the disk. This means that there is friction present and that the disk (ANY disk) will eventually wear out.

The question of whether "premium" brand disks are worth the extra money depends on several things. The most important of these factors is what you are using as a basis of comparison. An article in ***BYTE*** (Vol. IX, No. 10, p. 142), which compared several different brands of disks, found that the premium brands were generally good, but that several "bargain" brands were just as good.

The brand that would have been rated highest in overall performance was a medium priced brand that is not generally available. However, only a few of the dozens of brands that are available were tested.

I know from personal experience that many of the "cheapie" brands are excellent. One that is no longer available was my favorite. It had a substantial jacket that would take reasonable abuse such as ramming into the drive when you miss the slot, it had an excellent surface polish on the media (which usually means long life), it never gave read/write errors, it had NO label (which I consider a large plus), and it came bulk packed with an excellent Tyvek sleeve. It sold at the time for about the lowest price available anywhere.

The current disks that we have been getting from Western States Marketing in Cheyenne are of the same general quality except that they have a lighter jacket.

Some things to avoid in buying disks are:

- No hub reinforcing ring (this is not a common problem any more);
- A paper or cardboard sleeve. Tyvek is the ONLY accept-

able material currently used. Paper or cardboard sleeves, (which are rigid) lose particles that get under the heads and cause read/write errors);

- Disks with the jacket seams loose or poorly heat-sealed (they have popped open and ruined the disk when rammed into the drive by accident); and
- Disks which have an uneven media surface appearance (non-uniform coloration on different areas of the disk or an overall grainy appearance).

Question 3: I have seen ads for a device which makes a single sided disk double sided. How does this work ? Is it a good idea?

Answer: First, these devices do NOT MAKE THE DISK DOUBLE SIDED. The disk (all disks) are double sided when they are made. (Can you imagine a disk with only one side? I can't!)

What these devices do is allow you to turn the disk over and use the other side IN A SINGLE SIDED FORMAT. Note that if you use a double sided format, you are already using both sides of the disk and there "ain't no mo sides than two!".

The device that makes a disk a "flippy" is nothing more than a hole punch. Some of these are a bit more fancy, but a plain ordinary hole punch and an Exacto knife will do just as well.

What is accomplished is to provide a pair of 1/4-inch holes in the jacket near the center that are a mirror image of the two (one on the top side and one on the bottom side) that are already there.

These two holes allow the photo cell that senses the index mark (or the start of a track) to pass light through the disk when it is turned over.

It is also necessary to cut a notch in the side of the jacket that is a mirror image of the write protect notch so that you can write on the disk when it is turned over.

BUT... the inner liner of the disk jacket is constructed of a special low-friction open weave fiber and functions as a dirt catcher. If the disk is rotated in the opposite direction, any trapped dirt may be released to get under the read/write heads and scratch the disk. This will invariably cause a permanent read/write error.

Since flipping a disk will cause it to rotate in the opposite direction, "flippy" disks are strongly discouraged.

With disk prices currently at about 60 ¢ each, there is really no need to use flippies anyway. I try to avoid even using flippies in my machine, since any trapped abrasive particle that gets released and scratches the disk can also scratch a read/write head.

Disks are cheap; heads are VERY expensive; I prefer not to take chances. (An even better solution is to upgrade to double sided drives and get the same amount of storage "legitimately" without having to flip the disk.)

[Reproduced from K>BYTE.]

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Function Keys to Kill Backups and Save Files

by Jim Holmes

Some help with handling .BAK files in WordStar comes from George Blair. Writing for the August 1984 ***COGWheels***, he suggests: "... copy MAKE20.COM (get it from the Librarian) to your WordStar disk — it's only 2K, so it will fit". Then SETUP a function key to type:

```
^KD R MAKE20 *.BAK E
```

When finished editing, hit this key to kill ALL backups, then prompt for a "return to WordStar". George adds the reminder to be sure you leave at least two spaces (of the number SETUP tells you that you have) for ESC's. These are required when you enter a definition, though they don't appear on the CRT. If you try to squeeze in even one extra space, SETUP overwrites CP/M, and the disk will crash.

When finished editing, hit this key to kill ALL backups, then prompt for a "return to WordStar". George adds the reminder to be sure you leave at least two spaces (of the number SETUP tells you that you have) for ESC's. These are required when you enter a definition, though they don't appear on the CRT. If you try to squeeze in even one extra space, SETUP overwrites CP/M, and the disk will crash.

If you work with long files, you'll probably want to use the above, but be sure you save the file often when editing if you don't save backups. I recommend you learn to save often, whatever the file.

I SETUP a key to enter (^KS^QP). This saves the file, then returns to your place. I use it every screenful or so. When you plan on retaining a particular .BAK file (maybe you're not finished with the document), set another function key to read [^KS^KD]. This makes a .BAK file identical to the original.

Speaking of backups: a fine scheme for organizing them is suggested by Dick McLaughlin in the December, 1984 ***OPEN Sesame***.

Both program and disks are organized according to sensitivity, with most-sensitive stored at some remote location. Many people use a safe-deposit vault for this purpose. Dick says: "Keep your uninstalled, original vendor disks at the remote location, along with archive copies of important data disks. A security file should be kept — apart from the computer — where configured "masters" of your program disks and current data backups are stored. The disks you keep at the console should be copies of these".

Periodically recycle both archive and data backups. Be sure to pull "working" disks from the drives before "shutting down" but don't leave "doors" open, though. I use "trash" disks in both drives when I'm on the road. Any time you power up, remove disks from the drives.

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The Uses of DISK.DOC Files and How to Set Them Up

by Jim Holmes

Want to know what's in a data file, how to use a .COM program, etc.? Set up DISK.DOC files. It's a bit of work, but worth it, I've found. It will be a lot easier if you'll follow this outline:

- Log to a disk in drive A which has XDIR.COM;
- Put the disk you want to make a .DOC for into drive B;
- Type **XDIR B: DISKNAME**↵ (just as I did, spaces and all). As usual, XDIR for the drive B shows on your CRT.
- Type **XDIR A:**↵. You'll find a file, DISKNAME.DIR. It's the XDIR B: you just ran (saved in ASCII), which may be edited in WordStar.

With ver. 3.0 or 3.3, use Column Move; shift all filenames, column by column, to the left margin.

This is done in ver. 2.2n as follows:

- Block-mark the file (**^QR**↵**^KB^QC**↵**^KK**);
- Do a ↵;
- Then copy using **^KC**.
- Now a **^QR**↵, and edit the entire file.
- Using **^KY** delete column TWO, line by line, until you reach the FIRST status line.
- Delete this, too.
- Continue with edit; use **^G** or **^T** to delete the "copied" column ONE entries, now placing column TWO under column ONE!
- After clearing tabs **^ON** (enter **A** when prompted), set a new tab **^OI** at about column #20.
- As you enter your comments, use the paragraph indent **^OG** to space them properly.
- If you'd like a "hard copy", simply print the file. You can make one to fit the disk sleeve, setting **^OR50** and **.PO 0** (at top-of-file).

I wouldn't do it for every disk, but you WILL find it helpful for archive disks filled with letters or utility disks with a number of small .COM files.

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ARTICLES

Another Case of DU to the Rescue

by Stan Hecker

[The version of DU used was 8.6 on an Osborne Executive but the information is relevant to all CP/M computers.]

There I was using WordStar and laboriously pecking away at the keyboard (I type with four fingers). It was even more tedious than usual as I was paraphrasing the cryptic notes of a program review committee into somewhat more tactful language while composing a readable text.

Just as I was completing the 21st set of comments (page 10 on the screen), enter someone with a matter of vital importance . . . to him. As he began talking, I reached around to turn off the computer as the fan noise is quite distracting.

My usual routine is to save (**^KD**) the text and then exit (**X**) WordStar prior to turning off the computer.

Some two hours later when I was able to return to the program review comments, I started the computer with the WordStar disk that I had patched to immediately log to Drive B. After a few moments a "beep" emanated from the depths of the machine, followed by this screen display:

```
BIOS error reading drive B: CRC-error, etc . . .
Retry this operation (Y or N)?
```

I blithely entered **Y**. Once again the "beep" and display.

What next? I hit the reset button and started all over again only to be greeted by the same "sight and sound". Not wanting to be outfoxed by a mere machine I reset once again, put my system disk into Drive A and asked it for a directory of Drive B. My faithful old computer gave me the same response.

Panic! Panic!! All that work down the drain.

After regaining my composure I pried into the nether reaches of my tired brain to come up with some sort of an idea. I recalled that I had seen an article on recovering lost files in the ***FOGHORN***. Luck was with me as I still had the December 1985 issue on my desk.

Voila! There was an article by Kelly Smith on DU which had been adapted from Ward Christensen's documentation.

After a fast reading of the article, I pulled out my copy of the DU-V86 disk and its documentation (which I had downloaded from FOG #13) and put the disk into Drive A.

I fired up my machine and at the `A>` confidently entered **DU-V86**↩. After a short while my screen displayed:

```
Disk Utility V8.6
Universal Version under CP/M 3.1
Type ? for help
Type X to exit
:
```

It was my plan to follow the example in Kelly Smith's article to quickly retrieve my directory and then proceed from there.

I entered **LB**↩ to log over to Drive B where I had my crashed disk. At the `:` prompt, I entered **:G0**↩ to go to group 0 where the directory is housed.

Much to my chagrin I was once again rewarded with the "beep", the BIOS error screen display, and whether or not I wanted to retry the operation.

As I was quite upset and annoyed I entered **N**↩. The screen responded with:

```
++READ failed, sector may be invalid++
G=00:00, T=3, S=1, PS=0
:
```

I reasoned that if DU was able to tell me the group, track, and sector perhaps by some quirk I might get it to display. I therefore entered **D**↩ and the computer responded with a screen full of E5's in the hexadecimal section and e's in the ASCII section.

If I could get it to give me that much, I thought that if I stepped ahead a group at a time my luck might change. At the `:` prompt, I entered:

:+;D↩

The response was the "beep" and display to which I entered **N**↩ and got another screen full of E5's and e's. Rather than step through each allocation group, I decided to be brave and arbitrarily try group 9. I entered:

:G9;D↩

To my amazement there was apparently some good hex code and readable ASCII. Maybe I was about to solve the puzzle. I stepped back a group at a time and found that the disk contained usable material down to group 2. At `G=01:07, T=3, S=16, PS=1`, the E5's and e's began again.

With my juices flowing once more I thought that perhaps by starting at group 2 I might be able to recover all of the usable ASCII. I only needed the ASCII containing my program review comments, though, not all that was decipherable on the disk.

After poring over Kelly Smith's article and Ward Christensen's documentation, I decided to try using the = command to recover a specific ASCII character string. The most useful string would be one related to a particular project in the program.

I entered **=#1-Shipp**↩ which was the first project number and the researcher's name as originally entered before the crash. The computer responded with:

```
= AT 08
G=2C:00, T=11, S=33, PS=4
:
```

I next entered **D**↩ and, as if by magic, there, displayed before my eyes, was the first set of lost comments. To keep from having to duplicate my efforts I toggled the printer on by entering **P**↩ and at the next prompt, **D**↩.

My printer immediately started printing the first part of the comment set on that researcher's project.

At the next prompt, I cautiously entered +;**D**↩ and more of the remarks appeared on the printout.

With my new found confidence, after a few more +;**D**↩ entries, I entered +;**D**;/↩, meaning step to the next sector block, display the contents (and print as the printer was still toggled on), then continue until I enter ^**C**.

Amazingly, the screen began to scroll through the comments (and everything else readable on the disk) and the printer took off with a vengeance typing out the hex and ASCII.

Now all that I need to figure out is why the disk crashed.

So there you have it, the story of another great rescue by that hero of the microcomputer DU.

I cannot recommend too strongly that all microcomputer users get a copy of some version of DU and learn to use it. It has the potential to save you much grief (and probably some part of your sanity).

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Computer Insurance and Service Contracts

by Jim Holmes

Insurance of any sort is simply hedging against a risk. Computer insurance and service contracts are special cases which may benefit some more than others. I'll discuss my own experiences, but welcome input from others.

When a policy is written, the insured is "gambling" on something going wrong; the insurer "bets" it won't, (at least in the covered period).

A computer policy should be like auto insurance, covering fire, theft and acts of God!

Check the exclusions. Is coverage limited to some specific location? If so, owners of portable computers may have problems when a claim is filed. The carrier may want proof the damage (or theft) happened at the site. What about damages from lightning or electrical overload? Check exact descriptions of this coverage.

Next, is replacement full value (what you'd have to pay to buy a new one) or a pro-rated allowance (based on "blue book" value)? How about software? Some plans pay only for the media (blank disks); some may actually provide for time to reenter lost data files! Cost of coverage varies widely: it's wise to check around.

You can probably add-on to your homeowner's or commercial policy. Of several companies offering coverage, I chose Safeware (2929 No. High Street, Columbus, OH 43202). I felt the plan was best for the money. I've since added the computer to our office policy — more money, but a local agent — and software coverage.

If you're considering a service policy it should cover everything except misuse. Be aware that modification or non-factory approved add-ons will void your contract.

You must know who's backing up your service contract. In a dispute, you've only the hope of future business serving you as leverage. When a dealer's already got as much of your money as he's likely to see for some time, you're in bad shape! In my view, only a major firm, with service centers widely scattered is worth considering for a contract.

I have Americare (from Xerox) for my Osborne 1. While I must say it's saved me money, I don't know that I'd recommend it for most. When I bought the contract, Xerox was giving free software with the purchase. I paid $550 for two years, but got programs (dBASE II and CARDBOX) worth about $800 in addition to the warranty.

Based on personal experiences with a few other service contracts (TV, washer/dryer, etc.), roughly five percent of the item's original price is a fair price. At $275 a year, Americare service for computers worth less than $5,000 is expensive!

Americare, I must add, has done good work for me, though it's taken lots of effort on my part to get things done. My O-1 had a bad case (the keyboard would come loose in transporting it) from the time I first got it. When a Xerox tech discovered it, they replaced it (the entire case is $200, I'm told, if you have to buy it)! Trouble is, it took about 14 months (and umpteen phone calls from me) to have this done.

They don't mind putting in new parts, it seems, but take forever to get them! At $50-100 a year, I'd stay with them, but I know I won't renew at present rates.

Insurance is a personal choice. If it gives you peace of mind, it may be worth the cost even if you never use it. Be certain though, of what you're buying! Ask the questions covered above, and talk with group members first if you're still not clear on what is covered.

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HARDWARE REVIEWS

Review of the Commodore 128

by Reilly Burke

The most startling occurrence during the process of investigating the new Commodore 128 CP/M+ box was being asked by the Commodore salesman, "Why would you want to run CP/M? There's lots of good Commodore 64 software available."

When pressed further about details of the operating system, another salesman at a different dealer confessed: "Well, I don't really know anything about CP/M". (This is a man who is actually SELLING these machines to the public at large!) "I only know about MS-DOS," he says. It's like being told by a Chevy salesman that he only knows about Fords.

An hour of squatting in front of the dealer's C-128 with a box of disks revealed that the C-128 will easily inhale almost any generic CP/M programs. It won't recognize older single density disks, only DD Osborne/Kaypro/Televideo formats, or double-sided versions of the same. After checking out SuperCalc, WordStar, and dBASE II, I paid the man his money and took the machine home.

Why? For several reasons. The C-128 with 2 x 360K drives costs less than an upgraded 80 col./2 x 360K Osborne 1 or Executive; my Ozzie software all seemed to work OK; and I wanted a machine that could do music and games for the youngsters in the family.

At home I discovered that almost everything else (NSWEEP, MBASIC, CBASIC) ran satisfactorily, albeit slower than the Osborne. More like an Apple with CP/M card. Osborne's XDIR program (and FOG's D.COM) both give an accurate listing of files and sizes, but the "space remaining" total is wrong. *[Standard problem with any CPM+ system — SD110 on FOG/CPM.015 works correctly. Jack]*

The C-128 utilities are also weak in this area — the C-128's SHOW.COM only lists space remaining on disk — but doesn't list file sizes!

Osborne graphics, of course, won't run. This isn't a total loss because the C-128 is a two processor machine. It runs both Z80 CPM+ programs and 6509-based Commodore graphics programs using three entirely different disk formats. The ones we're interested in are the single and double-sided CP/M+ formats.

The high quality keyboard is good for business use in most respects. It has a numeric keypad but it lacks an automatic repeat. To type a series of spaces, for instance, one must keep tapping on the space key (unlike simply holding the key down on an Osborne).

Keys are oddly labeled in some instances (the "_" key is shown as a left arrow; there is an unusual "C=" key designed to boot Commodore 64 mode, and there are at least 10 arrow keys — not all of which work at any one time). None of this is a serious nuisance except the lack of auto-repeat on the keys. Any key can be programmed as a function key — a tremendous advantage to working writers.

The operating system is CP/M+, which claims to be an upgraded version of CP/M 2.2. But the implementation on the C-128 is slower than ver. 2.2, so it doesn't seem like an upgrade.

CP/M+ stores its system files as .COM files on the main part of the disk, thereby taking away from data storage space. Using one sided formats, you'll find about 160K of storage space; two sided formats yield about 340K.

Although the Commodore can read your DD Osborne disks without any difficulty, the opposite is not true. Commodore data must be PIP'd onto an Osborne formatted disk. The process is easy enough — the Media Master program is not required.

The C-128 is not fussy about mixing drives and formats, for instance you can boot the C-128 with a double sided C-128 WordStar disk and work on single sided data disks.

For users who are new to CP/M, there are two formidable obstacles to using the CP/M mode on the C-128. The first is an unbelievably bad Owner's Manual. It's hard to describe how seriously defective and deficient the C-128 manual is. It doesn't even tell the user how to find the utilities needed to get the system up and running (some system disks are two sided "flippies", some are not), or how to set up more than one disk drive.

You have to guess the DIP switches (set the drives as "Drive 1 & Drive 2" rather than CP/M's "Drive A and Drive B"). The C-128 allows you to chain together four 360K drives with simple serial connectors, so you can work on quite large projects without a lot of hard disk hardware hassles.

The manual doesn't even attempt to tell you about setting up serial and parallel outputs; oddly, it is mostly concerned about obscure BASIC programming issues.

Phone calls to Commodore's "HELP" line reveal the other serious Commodore documentation weakness: "Help" is advertised, but it doesn't come through. The folks who answer the phone are polite enough, but they don't know up from down. Plain and simple: they're a nice-mannered bunch of youngsters working the phones for a minimum wage. These underpaid teenagers will do wonders for FOG's future!

As far as peripherals go, some things are easy but some are a real rat's nest. Stringing together floppy drives or changing them are easy enough (good news to Ozzie owners who have struggled with drive changes). Printers must be of the Commodore/Okidata DIN-type or non-IBM parallel type, (i.e., Okidata or Epson) using a drug store interface (I'm using an Axiom ParallAx).

Printers with IBM ROM's will not work under any circumstances, (most printers sold in 1986 have been designed to work with IBM-PC's). I was unable to get any serial printers (like most Osborne owners have) to work because the serial

cont. on page 19

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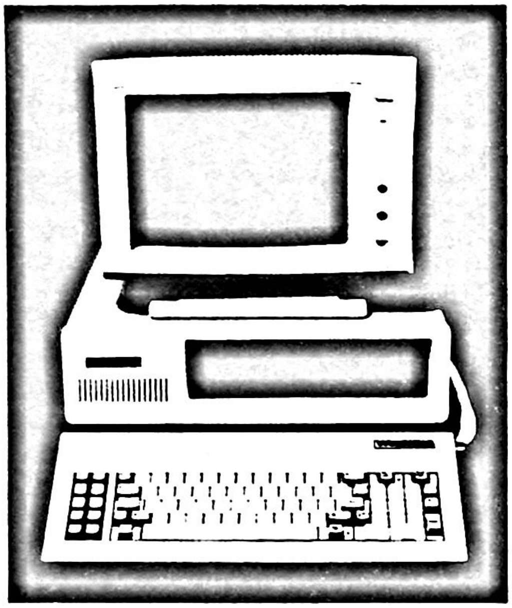

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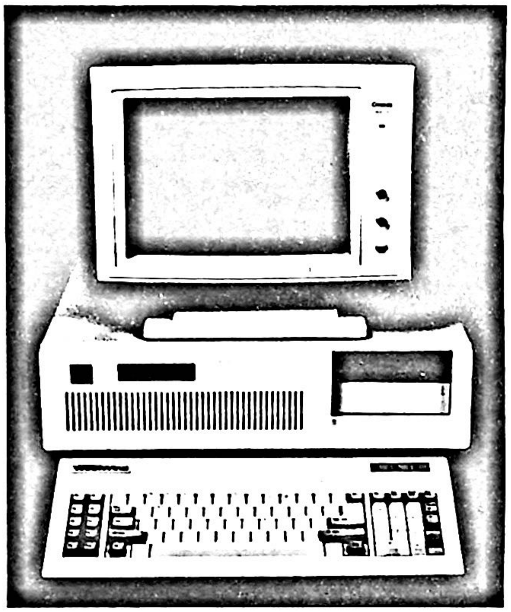

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port protocol seems to be fixed in hardware.

This doesn't mean that serial printers WON'T work; only that I have been unable to make them work. The various makeshift interfaces available at your local drug store are really slow and clumsy.

The serial port seems to be permanently configured as 9600 baud XON-XOFF, and it's difficult to decode the Commodore protocol. Software enthusiasts are invited to attack this port and report back to the ***FOGHORN***!

Although the C-128 is as slow as an IBM-PC while running WordStar, the bottom line can be faster than an O-1 due to the fact that the C-128 can hold WordStar, SpellStar, MailMerge and Grammatik all on one disk! The busy writer can write and proof a long document very quickly without any disk changes.

In fact, I find myself often using the two machines side-by-side: The O-1 for fast boot-up and quick writing and the C-128 for smooth, lazy spell and grammar checking.

The C-128 in some ways appears to be a mixture of cheap and nasty compromise and good quality hardware bits. To me it's like a machine that ended up in production while only 25 percent along the design phase (but that's the way my 52-column Ozzie always seemed to be, too!)

The C-128 is awkward and messy, with a forest of wires hanging all over the table requiring SIX (good grief!) 120V electrical outlets (hard to believe).

The keyboard has a solid feel to it but it has no auto-repeating keys. The drives are slow, but you can chain them together like building blocks. There is almost no CP/M documentation, but you can find a copy of ***CP/M Plus*** by Sybex at almost any bookstore.

And, as strange as it may seem, you can play Zaxxon, Raster Blaster, or Mozart's Sonata in D Major on it as soon as you take it out of the box.

Not quite as dazzling as an Amiga, but pretty intriguing all the same if you're into CP/M, cheap games and music.

* * * * * * *

The Dynax DX-15 Printer

by Henry G. Belot

The Dynax DX-15 letter quality printer is one of a number of bargain-priced daisy wheel printers which offer the basic features of the "professional" Diablo, Qume, and NEC machines but at significantly lower printing speeds.

The Dynax, like several others in this category, is manufactured by Brother. It appears to be directly equivalent to the Brother HR-15. I bought mine with the optional keyboard and sheet feeder.

I used to own an expensive office typewriter with a host of features including window-into-memory, phrase and format memory, automatic justification, column formatting, and other goodies. I had a computer interface for that typewriter that cost as much as the Dynax alone and did a less satisfactory job.

After the typewriter was stolen, I decided to sacrifice some of its superb convenience as a typewriter for a smoother interface to my word processor. I miss the typewriter, but, on the whole, the Dynax is a better match to my current working habits.

This review is **very** detailed, so keep in mind that most of my criticisms are nitpicks. On balance, the Dynax and its clones represent excellent value and, unless you have money to burn and need the higher output of the big-name machines, I can imagine no reason to choose them over the Dynax.

Let's begin with the printer.

Dynax as a Printer

The Dynax is unquestionably a slow printer: the manual specifies 13 cps which makes it, perhaps, a little faster than an excellent secretary who never makes mistakes. (Know any?)

Except for that and, maybe, robustness, it is comparable to, say, a Diablo printer. It conforms to the Diablo 1640-1650 protocols except that it doesn't incorporate all the formatting features of such machines.

It can be installed directly from the installation menu of WordStar 3.30, but it cannot be installed as a Diablo 640, the only Diablo option in WordStar 2.26. However, the manual does provide an adequate listing of the various control codes so that you can manually patch it into WordStar.

The printer can print at 10, 12, and 15 pitch. The necessary spacing tables for proportional mode are built into the firmware and a good-looking proportional printwheel is available. It will not take the wide computer paper so popular for printing out reams of data in indigestible form, but the 15-pitch position does allow you to fit all that stuff into 8-1/2 inches.

I bought mine with the serial interface. Installing the printer was simply a matter of plugging in a standard RS-232 cable and using SETUP to access the serial port. As I recall, the two sets of dip switches on the back of the machine were all correct in their default settings, but if not, the manual is reasonably clear in showing how to adjust them. (The manual is sparse and written in Japanese English, but it's adequate if you have a little experience in such things.)

The printwheels are the same as those used in Brother's electronic typewriters. They have 96 characters and each is enclosed in a transparent plastic case. The codes for accessing the extra characters are given in the manual and can be patched into WordStar if you need them.

Changing wheels is a snap. Simply lift the cover, press a button on the printhead, lift out the old wheel by the convenient tab, drop the new one in, and snap the printhead shut. There is no need to remove the ribbon and, when you close the cover, the printhead automatically indexes the daisy wheel, so you need not be concerned with aligning notches on the wheel with tabs on the hub of the printhead.

While convenient, this system locks you into Brother's proprietary — and relatively expensive — daisy wheels; you won't be able to use those $7 generic bargains available in the larger mail-order catalogs.

While the price is high — $20 or so — you won't be buying them very often and the selection is good. However, many familiar typefaces are designated by unfamiliar names in the Brother line. For example, the popular Courier typeface is known as Brougham and Anelia is a look-alike for the handsome Boldface proportional font. Grande is Brother's version of Orator, an oversized, all upper-case font popular for producing ugly overhead transparencies and for scripts. The 15-pitch "Quadro" daisy wheel is handy for long tables of numbers. It's a very clean, sans serif font that is easy to read in spite of its small size. ("Sans serif" means there are no fancy "hooks" on letters like T and L. ***FOGHORN*** and ***FOGLIGHT*** are printed in a sans serif font.)

The Letter Gothic font called, strangely enough, Letter Gothic is not the cleanest version of this typeface. Although designed as a 12-pitch font, the white space between letters is not at all uniform, often giving it the look of a 12-pitch font that's been printed at 10-pitch. (For those of you who never got to freak out on IBM Selectrics, "pitch" translates to "characters per inch.")

This, by the way, is not an exhaustive list of available fonts.

Changing ribbons is easier than in any daisy wheel printer I've used. Yes, they all use cartridge ribbons, but with most you have to be careful that the ribbon drops down properly between the printwheel and the platen, and often you must also be sure that the little knob on the cartridge for winding in the slack mates properly with the hub on the carriage that winds the ribbon.

With the Dynax two tabs at the back of the cartridge fall easily into slots at the back of the printhead carriage and that's it. You could do it blindfolded.

The ribbons are available in a variety of colors and backings. I bought a supply of both black multistrike and brown correctable carbon ribbons.

The multistrikes perform perfectly. The end-of-ribbon trigger in the black ribbons has never failed me — which is more than I can say for the Diablo and Qume ribbons I have used in the past.

However, the brown ribbons do not have the end-of-ribbon trigger. A notice in the box warns you of this. Whether it's because the ribbon is brown or because it's the correctable style, I don't know.

But on long jobs, you need to be sure you have enough ribbon to complete the job. The backing in these brown ribbons also seems to be a little delicate — it can break if the paper jams. However, a little patch with transparent adhesive tape is enough to set things right.

Finally, my brown ribbons also shed a little bit for the same possible reasons as the lack of the end-of-ribbon trigger. After a long job, you need to wipe off the paper guide and blow out the carbon dust.

You can also install a short colored ribbon on the correction tape spindles and access it as the alternate color: Your red ink can really be red ink.

Incidentally, the ribbon boxes are about the same size as our 5-1/4" floppy disks. It's a very tight fit, but you can store four or five disks in the boxes. I use them for archiving old data disks.

One annoying aspect of the printer is its fault alarm, or "bell". It's about as loud and piercing as a smoke detector and it doesn't shut down until you shut the printer off or correct the problem by putting in paper or replacing the ribbon. Therefore, you shouldn't leave the house or apartment while your printer is running: By the time you get back to the printer, the fire department will have hacked down your door trying to save you from some unseen inferno.

I have never tried to activate this "bell" from within a computer program, so I don't know if it stays on in the same way. If you use your printer bell in programs, perhaps you'd better check this point or settle for using the bell in your computer instead.

A more minor nuisance — for me — is that the built-in underscore function, like WordStar's, skips the spaces between words. Thus, there is no way around the problem but to manually insert underscores in the spaces — which confuses WordStar when you try to reform paragraphs. (My objection to omitting the underscore between words is that it makes me want to read the underlined phrase one . . . word . . . at . . . a . . . time instead of as a phrase.)

There are six push button switches along the front edge of the printer concealed under a colorful blue, green, and orange membrane. These allow you to select and deselect the printer, change pitch and line spacing, do form and line feeds, and print copies.

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The standard version includes a 3K buffer which is expandable to 8K. By using a tricky combination of the select and copy buttons (read the manual carefully, folks), you can dump the memory as many times as you like thereby freeing up your computer. At least that's the theory.

Three-thousand characters ought to be enough for at least a one-page document, and 8K might get you three or four pages. But it doesn't work for me. That's not the printer's fault. It just happens that I do most of my printing in proportional mode and I use a special printing program which overrides the built-in proportional spacing controls of the machine. It sends **two** bytes for each printed character — one for spacing instructions and one to print the characters. Thus, my 3K of memory is gone in less than a page.

Incidentally, the internal proportional printing tables work just fine. The print quality is comparable to the best I've seen from the highest-priced business printers with a lot of variety in character width and a uniform spread of white space between the characters. The printing program I use simply handles those tricky details like proportional-plus-justification, centering, and uniform tabs that WordStar does not.

The Sheet Feeder

I was a little nervous about buying the $250 sheet feeder option. Sheet feeders in general have a reputation for misfeeding, and this is only logical. Have you ever seen an office copier that didn't jam occasionally? And think what they cost. Even sheet-fed printing presses in the five-figure cost-range jam. Feeding sheets is trickier than it seems.

That said, I have found the sheet feeder reasonably reliable so long as you apply some common sense in storing and handling paper. That means storing paper flat and protecting it as much as possible from extremes of heat and humidity. It also means, as the terrible instruction manual warns, that you **never** leave paper wrapped around the platen even for a couple of minutes. When you get to the end of the job, eject the last sheet and start the new job with a fresh sheet.

The feeder is easy to install. You punch out two knock-outs on the back of the printer, slip it in place, fasten two knurled screws, and attach a cable to a receptacle at the back. The screws, unfortunately, are not captive, so they are easy to lose if you remove the sheet feeder frequently.

However, it doesn't interfere with the printer's use as a typewriter, and I haven't removed it once since I installed it months ago. But, if you also buy the tractor feed option, the screws could present a problem.

The supply of paper drops into a bin at the back of the feeder. You press a button on the side to engage the feed mechanism and pull forward on an exit guide at the front. The finished pages end up in reverse order in the front bin at the end of the job. Closing this exit guide shuts the feeder off so you can eject the last page without having a new one wrap around the platen. It also allows you to use the machine as a typewriter. I have even fed continuous form paper through the printer in this mode in order to produce television scripts that would run in a teleprompter.

The printer has a smoked plastic sound cover which snaps over the printing area. With the feeder in place, you have to remove it to change ribbons or printwheels, but it **must** be in place while the printer is operating. It is part of the mechanism which guides the paper through the printer. Mine seats somewhat loosely and sometimes pops out if a page isn't guided quite correctly through the mechanism.

The sheet feeder always advances the paper to one inch below the top edge and begins printing there. In fact, it sets up one inch margins top and bottom overriding any other settings you may have engaged with your software.

This can be a nuisance if you like to put headings near the top of the page as I do. WordStar's top and bottom margin settings will not override the top margin default.

The feeder is designed this way in order to ensure that the paper bail closes against the top edge of the paper. It would be nicer if the paper bail's operation were made dependent entirely on line count; i.e., if it allowed the printer to print on, say, line 3, and then closed the bail when line 6 was reached. But it doesn't — the paper bail is tied inextricably to the form feed function. Period.

There are instructions in the manual on adjusting the top margin to higher or lower values, but I wasn't able to make them work. For the lower margin, I reset the dip switches so the Dynax thinks it has 12" paper.

However, the proportional-spacing printing program which I use does seem to be able to use the margins for text which suggests there may be an error in the manual or that I had a bad day when I was trying the various programming techniques for resetting margins.

The manual also warns against feeding paper backwards more than one line when the feeder is in place. This is good advice because the paper will get crunched up in the process. However, I have found I can backfeed about three lines without problems. (This is not a way out of the top margin dilemma — the feeder simply ignores the command in that region.)

Setting all these details aside, I have found the sheet feeder to be a useful adjunct to the basic printer. I **can** walk away and do something useful while the printer does its thing. Nine times out of 10 it does its thing perfectly.

Dynax as a Typewriter

When considered as a printer, the Dynax shines. Considered as a typewriter, it loses some of its sheen.

To use it as a typewriter, you simply install a $150 keyboard, which plugs into the back of the printer, and throw a rocker switch on its side. The various plugs on the back of the machine are each distinctive. You cannot plug the right accessory into the wrong receptacle.

The keyboard has an excellent feel and a pretty good layout. The apostrophe and quotes are in the more or less standard positions and the various exotic punctuation marks and foreign language accents are shown on the keys.

There's an express key for returning to the left margin without a line feed, and keys for feeding paper forward or backward in half-line increments or continuously.

My biggest complaint about layout is that Brother has squeezed an extra key in next to the carriage return key. Even now, months after acquiring the printer, I still occasionally find myself printing a +/- symbol when I meant to start a new line.

Slider switches along the top of the keyboard adjust pitch and line spacing. A third slider adjusts the keyboard to match different petal patterns for using the various foreign language printwheels. Proportional spacing is not available from the keyboard.

While the keyboard is attached by a cable, it is a short one and you're not likely to want to use this keyboard in your lap. But if you're touch typing a document of any length you won't want the keyboard in your lap anyway.

The printer has a large footprint and with the keyboard attached, it's a monster. It will not fit comfortably on my roll-around typing table. I push the printer as far back as its rubber feet will allow, with the back of the printer extending about two inches beyond the table, and tuck the keyboard under the front edge. In this mode — with the keyboard's adjustable feet completely retracted — the keyboard still extends off the front of the table, but it's secure enough to allow for convenient typing.

Technically, the keyboard-printer combination is an electronic typewriter, but in practice it makes better sense to think of it as an old-fashioned electric typewriter. It lacks nearly all of the more-or-less standard electronic typewriter features. There is no automatic carriage return. There is no provision for automatic underscoring — you must back up and manually underline. There is no boldfacing at all.

All this is strange because these capabilities and proportional spacing are built into the printer's firmware.

Even worse than these shortcomings, the typewriter system does not remember margins or tab settings except for the default settings. Each time you turn it on, you must reset margins and tabs — unless, of course, you always want your tabs set at one-inch intervals and margins at one-inch and 7-1/2". Once you set a tab manually, though, all the other default tabs are automatically cleared.

The temporary indent feature is not adjustable. If you want to set, say, a long quote within your text, plan on indenting it five spaces or manually resetting the margins. A more flexible indent feature is handy for many chores such as typing addresses on envelopes and laying out text in columns.

If you want to center a heading on the page, better plan on counting the characters, dividing the unused space by two, and manually resetting the printhead. There is a half-space key that allows you to accurately center two consecutive lines that are only one (or three or five . . .) characters different. However, it resets to standard spacing at the first space between words, so if you're being fussy and your line is a half-space off, you have to space twice and half-backspace once after each word in the centered line.

The typewriter system does provide decimal tabs and a one-line memory for correcting errors. Unlike some electronic models, the decimal tab will not allow you to right justify partial lines of text unless you skip over any periods in the line and put them in later. (WordStar has the same problem. In fact you can't right-justify more than one word, periods or not.)

The correction tape is standard IBM correction tape, either lift-off style or cover-up style according to the ribbon that you're using. Unlike other systems, the correction tape does not have to be threaded behind a metal finger to keep it separated from the printing characters. Instead, the Dynax drops the tape well below the print mechanism where it's out of the way until needed. I have had problems, however, with the system not erasing the top half of capital letters on some areas of a line.

The one-line memory allows you to erase characters within the line you're typing. Once you press the return, memory is lost. You can make corrections on a previous line in the old Selectric style where you back up to the character, press the appropriate erasure code, and "retype" the error.

Should You Buy?

The proper thing for me to do here is to simply summarize the main points of my review, but let's back up and consider a broader perspective.

If you have no printer at all, you have a full spectrum of choices before you. I would suggest starting with a dot matrix printer. When I first started free-lance writing, I thought a letter quality printer would impress my clients. I was right. But I got equally enthusiastic response to drafts printed with my dot matrix printer.

First, it said to them, "Oh, you have a word processor." Second, they liked the variety of print layout — titles in double-width, boldfaced headings, and the like. Even announcers found the print very easy to read and they liked having their portion of the script highlighted in emphasized text.

You may not be presenting your copy to the same types of clients I do, but if you write professionally, you will be presenting your documents to other professionals, and they are likely to have many of the same reactions. If, for instance, you write for print, your editor might prefer well executed dot matrix copy because it can provide clues as to how you would like text formatted when it is typeset.

On the other hand, I always choose the Dynax for business letters or formal business reports. Chief executives prefer the more formal appearance of letter quality pages. And what the Chief Executive likes is what his minions like.

Professional writing considerations aside, a dot matrix printer is much faster than **any** LQP you can buy. Even if you're only writing an informal letter to a friend or hacking out a computer program, the slow print speed of the daisy wheel will soon drive you up the wall. Therefore, for all these reasons, I suggest you start with the dot matrix unless business absolutely demands a daisy wheel printer.

Until recently, if you wanted both letter quality and printing speed, your only choice was to own two printers.

But that's changing. There's now a Brother printer with both dot matrix and printwheel mechanisms on the same chassis. Perhaps even more interesting are the newer high-

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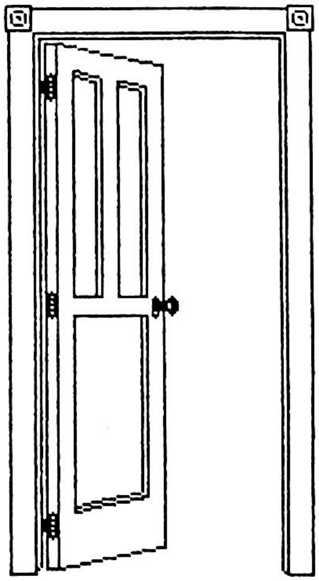

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end dot matrix machines.

For years manufacturers and many users have touted "letter quality" dot matrix printers. This has usually meant a somewhat ornate typeface and a degree of proportional spacing. To the discerning eye, however, most of the print from these machines looked less professional than text from simpler printers.

The elaborate character design only emphasized the inadequate resolution of the dot matrix system. Programs like early versions of Fancy Font and things like the Macintosh printing system tend to look like a Xerox copy that's a copy of a copy of a copy. The print is very coarse and sometimes hard to read.

This seems to be changing. I have noticed a number of dot matrix printers that could produce text nearly indistinguishable from the output of a daisy wheel printer. I almost had to bury my nose in the page to see the difference.

These printers have very dense dot matrix patterns with more than twice as many pins punching out the letters than earlier printers. Some models can even be programmed to impersonate popular typefaces used on the letter quality machines.

So far these machines seem to be relatively expensive, sometimes nudging $1,000. But if you have the money to spend all at once and you were going to end up buying two printers anyway, I think these machines are worth considering. The one thing they do not offer is carbon ribbons. The non-fabric carbon ribbons are the final touch in producing a true, print-like page.

There are also laser printers which offer 300-dot-per-inch resolution. These come close to typeset quality in the largest font sizes, they are quiet, and they are fast. However, they are also expensive — two to five times as costly as the expensive high-end machines which I just discussed.

Finally, let's suppose you already have a dot matrix or you can't afford to spend all that money in one lump sum. Should you consider the Dynax or its clones?

Definitely. Taken altogether the Dynax (Brother) printer is an extraordinary value. It produces very clean impressions, offers a good variety of printwheels and ribbons including proportional spacing, interfaces easily to a computer using fairly standard function codes, and offers affordable accessories that expand its usefulness.

If your primary concern is a solid, reliable letter quality printer, the Dynax DX-15 is an excellent, affordable choice. If you need to handle wide paper, there are other, more expensive models with the same basic features and a little more speed.

If, in spite of your fancy computer, you still do a lot of manual typing, you should also consider the new generations of electronic typewriters and their computer interfaces. These have come down in price and the interfaces have gone up in quality since the days when I bought my office machine. Such a typewriter may represent a better value for some users.

• • • • • • •

SOFTWARE REVIEWS

SmartKey — Part 4

by Charles Sandercock

Now that you are getting the idea of how to use SmartKey to read in a file, search for a wanted thing, eliminate material above it, go to the bottom of wanted part, eliminate below it to the end of the read in file, I should be able to explain the address file reasonably easily.

The address file A:@A is 7K long and contains the full names and addresses of the 80 people to whom I most commonly write in business.

There is no theoretical reason why the address file could not contain hundreds or even thousands of addresses but disk access times will eventually become the limiting factor. This is so because while an address can be typed in about 15 seconds, in practice it takes about 45 seconds if it must be looked up on hard copy. My "search-find" routine takes eight seconds when the file is below 8K and this is good. However, if the file A:@A was 30K, for example, there would be a lot of additional disk access which could make it time-uneconomic although the convenience would still be there.

For those with big address lists, contemplate files A:@A-K, A:@L-R and A:@S-Z but also be realistic. If you regularly write to 1000 people then .DF or using dBASE is probably your bag.

Only part of file A:@A reads as follows:

```
..
..filename a:@address for storing 80 addresses in one file
..Andrus
Andrus, Sceales, Starke & Sawall,
735 North Water Street,
Suite 1102,
Milwaukee, Wisccnsin 53202,
U.S.A.
..eOT
..Anthony Bearings
Anthony Bearings Pty. Ltd.
68 Keon Parade,
Keon Park,
Vic. 3073.
..eOT
.
.
.
..Austin, George
Mr. George Austin,
C/O 3 Prior Road,
Noble Park,
Vic. 3174.
..eOT
..Baldauk
Baldwin, Son & Carey,
P.O. Box 3295,
Auckland 1,
New Zealand.
..eOT
..Baldwell
Baldwin, Son & Carey,
P.O. Box 852,
Wellington 1,
New Zealand.
..eOT
.
.
.
..COP
The Commissioner of Patents,
Patents Office,
P.O. Box 200,
WODEN A.C.T. 2606.
..eOT
.
.
.
..Yonehara
Yonehara & Hamamoto Patent Office,
Bansui Building,
5-16, 1-chome Toranomon,
Minato-Ku,
Tokyo, Japan.
..eOT
.EFeOF
```

I have left off mostly everyone with a name below "B" as the above will illustrate it well enough.

To use the address file I start a new file, call the format /LETT1 (see a previous article), enter the filename, do ↵ to get to the end of the file (via a continuation after a SmartKey pause) and then press \@.

<\@> is redefined as:

```
<.@>  <^Y^Kb^KrA:@A^M^Qf ..><^MU^M^Kk^Ky^Qf ..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk^Ky^R^Qc>
```

and works as follows:

^Y
(Delete line so as to get rid of leading and trailing spaces.)

^KB
(Insert block begin marker.)

^KRA:@A^M
(Read in the file A:@A.)

^QF..
(Find "..'mnemonic'" -- SmartKey now pauses and waits for input of what it is that it is to find, e.g., find "..baldw". After entering that which is to be found, do a ↵ to restart SmartKey

after the pause for input.)

^MU^M
(Start the actual search and ignore the case of the input entered during the pause.)

^KK^KY
(Having now found the start of the "baldw" text, insert a block end marker and delete the block above "..baldw".)

^QF..eOT^M^M
(Find the "..eOT" after "..baldw".)

^X^KB
(Step to the next line after that "..eOT" and insert a block begin marker.)

^QF.EFeOF^M^M
(Find the end of the file @A.)

^X^KK^KY
(Step down one line, insert block end marker and delete the part of the file @A below the "baldw" text.)

^R^QC
(The previous operations leave you looking at a blank screen and then roll up a screen and go to end of file simply makes things look better.)

You will note that although it was necessary to type "baldw" to find the address of Baldwin's in Wellington, it would only be necessary to type "b" to get Baldwins in Auckland.

Having called in the address, one then types the necessary letter using, importantly, hyphens to underline a reference such as:

"Re: Australian Patent Application No. 12345/84
In the name of Fred Day
Your Ref: PS Our Ref: CS/MO'T"

At the end of the letter I type <**5**> and get:

```
..ys
.CP 8
.FO &yymmdd&,&diskname/o&,&filename/o&,#

Yours sincerely,
SANDERCOCK, SMITH & BEADLE



Charles Sandercock
```

That ender, one of several, was called by:

```
<.5>  <^Y^Kb^KrA:@E^M^Qf ..ys^M^M^Kk^Ky^Qf ..eOT^M^M^Kb^Qf
.EFeOF^M^M^X^Kk^Ky^R^Qc>
```

Thereafter, if I wish to send a debit note for work done, I type:

<\↩>

which causes the following to occur:

```
<.^M>  <^M^Kb^KrA:@F^M^Qf..L2^M^M^Kk^Ky^Qf..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk^Ky^Qf../LETT^MB2^M^X^Kb^Qf-----^M^M^X
^Kk^Qc^Kc^QfDear^M^M^Y^Qc^M^Kk^Kb^Ky^0165^M^I^I^P^S
DEBIT NOTE NO.^P^S^H>
```

I will not explain that in depth as it is specialized, but others may adapt it for different purposes.

For those interested, my current WSDEFS.DTX file reads as follows:

```
..
..revised 12th December 1984
..last filename used was WST.DTX on 841212
```

SmartKey II Key Definitions:

```
<.^I>  <^Y^Kb^KrA:@><^M^Qf..><^MU^M^Kk^Ky^Qf..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk^Ky^R^Qr>

<.^M>  <^M^Kb^KrA:@F^M^Qf..L2^M^M^Kk^Ky^Qf..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk^Ky^Qf../LETT^MB2^M^X^Kb^Qf-----^M^M^X
^Kk^Qc^Kc^QfDear^M^M^Y^Qc^M^Kk^Kb^Ky^0165^M^I^I^P^S
DEBIT NOTE NO.^P^S^H>

<.#>  <RA:ENUM^M>

<.$>  <^Ks^Qp>

<.%>. <A:WS^M>

<.(>  <^Y^Kb^KrA:@E^M^Qf ..specend^M^M^Kk^Ky^Qf ..eOT^M^M
^Kb^Qf.EFeOF^M^M^X^Kk^Ky^R^Qc>

<.)>  <^Y^Or60^M^Kb^Kr A:@F^M^Qf..pct^M^M^Kk^Ky^Qf..eOT^M
^M^Kb^Qf.EFeOF^M^M^X^Kk^Ky^Qr^X^Qd><^Qc>

<.:>  <a:pip m:=a:@*.*[v]^Ma:ws^M>

<.=>  <^OR76^M>

<.0>  <LB^M>

<.1>  <LA^M>

<.2>  <^KD>

<.3>  <^Y^Kb^KrA:@E^M^Qf ..yr^M^M^Kk^Ky^Qf ..eOT^M^M^Kb^Qf
.EFeOF^M^M^X^Kk^Ky^R^Qc>

<.4>  <^Y^Kb^KrA:@E^M^Qf ..yf^M^M^Kk^Ky^Qf ..eOT^M^M^Kb^Qf
.EFeOF^M^M^X^Kk^Ky^R^Qc>

<.5>  <^Y^Kb^KrA:@E^M^Qf ..ys^M^M^Kk^Ky^Qf ..eOT^M^M^Kb^Qf
.EFeOF^M^M^X^Kk^Ky^R^Qc>

<.6>  <^Ks^Qq^B1>

<.7>  <^Y^Kb^KrA:@F^M^Qf ..L2^M^M^Kk^Ky^Qf ..eOT^M^M^Kb^Qf
.EFeOF^M^M^X^Kk^Ky^Qc^R^Qc>

<.8>  <^Y^Or60^M^Kb^Kr A:@F^M^Qf..auspec^M^M^Kk^Ky^Qf..eOT
^M^M^Kb^Qf.EFeOF^M^M^X^Kk^Ky^Qr^X^Qd><^Qc>

<.9>  <^Y^Or76^M^Kb^Kr A:@F^M^Qf..L1^M^M^Kk^Ky^Qf..eOT^M
^M^Kb^Qf.EFeOF^M^M^X^Kk^Ky^Qr^X^Qd><^Qc>

 <.->  <^OR60^M>

 <.;>  <^Qa@@@^M@^H^M?^MN^M>

 <.+>  <LA:^MX^MA:FIXKEY 7 0 ^M>
```

```
(.@)  (^Y^Kb^KrA:@A^M^Qf ..)(^MU^M^Kk^Ky^Qf ..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk ^Ky^R^Qc)
(.P)  (A:PIP A:=B:)([V])
(.[)  (MA:[STNDFRM^M)
(.`)  (^Qf../LETT^MB^M^X^Kb ^Qf-----^M^M^X^Kk)
(.d)  (Australian Design Application No.)
(.p)  (Australian Patent Application No.)
(.r)  (Our Ref: CS/MO'T)
(.y)  (Your Ref:)
(.t)  (Australian Trade Mark Application No.)
(.{)  (^I^X^Qs)
```

I can now deal with boilerplating, which is of course, the use of the techniques described in previous articles.

It is not necessary to discuss the actual content of my boilerplate files and we can be content with their form only.

My Patent texts boilerplate file A:@P has the following form:

```
..
..Patent boilerplate texts
..revised 850319
..text1
```

(here is set out text 1 with various ".AV" commands and various ".DM" cues to help answering of the ".AV" questions)

```
..eOT
..text2
```

(here is set out text 2 of similar form to text 1 but for a different purpose)

```
..eOT
```

.

. (similar for text 3 to text n)

.

```
.EFeOF
```

To use that boilerplate file, start a letter as described in previous articles and when you get to the place where you want to insert a certain boilerplate, actuate <**Tab**> which is reconfigured as:

```
(.^I) (^Y^Kb^KrA:@)(^M  ^Qf..)(^MU^M^Kk^Ky^Qf..eOT^M^M^Kb
^Qf.EFeOF^M^M^X^Kk ^Ky^R^Qr)
```

This works essentially the same as the address searcher previously described except there is a pause after ^**KRA**:@ to enable you to specify which boilerplate file you want (in the present case @P — the Patents boilerplate file) followed by ↵ to restart the SmartKey string and at the ^QF.. pause, you enter **text1**, **text2** or whatever other text you want followed by ↵.

The result is that the text you want and only that text is pulled into the file.

You then continue typing the letter in the normal way pulling in other texts if and when required.

These techniques are so simple when you know them: they rely on nothing more than conventional WordStar codes. But only SmartKey lets you run out strings of 80 or more characters long with pauses where required for user input and lets you pack your boilerplate into a lesser number of files (one only if you wish) while still letting you have full and quick access to every part of that file while within another WordStar file.

I hope you will now see why I think SmartKey is such a bargain.

Happy SmartKeying.

• • • • • • •

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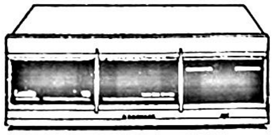

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Three Languages on the O-1

by Chuck Hansen

Three years ago when I acquired my Osborne, I doubted I would ever be able to find an affordable language that would produce fast, compact COM files and was reasonable to use with two relatively small floppies.

Today, the problem is deciding what language and implementation to use.

TURBO Pascal is a familiar standard to me as I have used it since version 1.0. Aztec C is a full C compiler including I/O redirection. It offers the facilities for doing things that are not possible in TURBO. MTBASIC is relatively new to the scene. It promises multitasking, multiline functions, windows, and full recursion.

How well can each of these languages perform basic tasks like looping, memory access, floating point calculations, file I/O and screen access? Is the implementation appropriate for small floppies? What about the documentation and portability?

The first question can be addressed using benchmark programs. The August 1983 issue of ***BYTE*** offers a variety of benchmarks for C compilers. These were used as a starting point in developing a set of test programs for the three languages.

The Sieve of Eratosthenes is a widely-used test of looping and memory access speed. The results show that in terms of speed Aztec C is the slowest. However, use of register variables which are unique to C, reduced execution time to 30 seconds. TURBO at 29 seconds is the fastest. All in all, the range of 29 to 34 or even 41 seconds is not large.

Program size does differ markedly. MTBASIC at 14K uses the most space — the extra space probably needed for the multitasking and windows. Aztec C and TURBO, at 8K and 9K respectively, do not show a significant difference. However, by using the TINY library supplied with Aztec C, the size can be reduced to 3K!

Compile times show even larger differences. Aztec C is a traditional compile-assemble-link package. With floppies alone, patience is necessary. Using the TINY library, compile time for the Sieve program can be reduced by about 35 seconds. Aztec C also offers a fast link option. MTBASIC and TURBO are single pass compilers, producing a COM file with no intermediate steps. The time difference between TURBO and MTBASIC is an indication of the different way they produce COM files. MTBASIC reads in a file that has been saved and writes a COM file to disk. TURBO Pascal will read the program from memory — if it fits — and writes the COM file to disk. To compile in memory both TURBO and MTBASIC require only a second or two for the test programs.

Sieve of Eratosthenes

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	41 sec (30 sec)*	34 sec	29 sec
Compile Time	2:13	15 sec	6 sec
Size	8K	14K	9K

* register variables

For a general purpose language, **floating point operations** are essential. A benchmark presented in ***BYTE*** tests repeated multiplication and division. However, the very different methods the languages use to implement floating point operations makes drawing conclusions difficult.

TURBO is the fastest by a substantial margin. It uses 6 byte reals for about 11 digits of precision over a range 1E-38 to 1E+38. In testing the floating point operations, overflow was detected and a message printed. The MTBASIC manual says little about the floating point operations except that it is "IEEE compatible" and uses 4 bytes.

It is not possible to display numbers in exponential format. The smallest number possible is .000001 or 1E-5. At this size, there is one significant digit. Overflow at maximum was not detected; the result became zero. Maximum real number was displayed as 8388607000.00000 with about six digits of precision.

Aztec C was by far the slowest. C calls for all floating point operations to be carried out in double precision for about 16 digits of precision. The Aztec manual indicates that operations use "16 character mantissas" which would indicate that Aztec C processes much more data in floating point operations than the others.

Compile times and program size are generally consistent with the results for the Sieve test. Aztec C shows a jump in size as the necessary parts of the math library is included.

Floating Point Test

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	4:21	46 sec	35 sec
Compile Time	2:16	14 sec	7 sec
Size	11K	14K	9K

File I/O is another area that can be critical. Aztec C uses a 1K buffer while TURBO Pascal uses a 128 byte buffer. This major difference heavily weights the scale in favor of C. No mention is made of buffer size for MTBASIC. The test program reads from a file and writes to another, one character at a time.

In attempting to implement the file I/O test program for MTBASIC on a character by character basis using the sup-

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plied GET function, my output file had grown to about five times its original size. Upon examining the file, I found that in reading each character as an integer and writing it as an integer (which the manual indicated was possible) each character had been converted to a string representing its ASCII code and placed on a separate line.

After some further experimentation I abandoned trying to formulate a comparable test program and used one supplied in the MTBASIC manual. It reads and writes lines of 80 characters. To determine if this altered the results, the TURBO test program was modified to read 80 character lines.

The time for this modified program was a few seconds longer than for the character by character version. The times below are for the character by character versions for C and Pascal with the MTBASIC version being for 80 character lines. The input file was a text file containing 10,000 characters.

File I/O

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	13 sec	58 sec	1:07 sec
Compile Time	2:16	14 sec	7 sec
Size	9K	14K	9K

Recursion is, in the simplest terms, the ability of a called routine to call itself or call another routine that calls the original routine. In Pascal and C this can be thought of as involving separate copies of the routine in memory — one for each call to the routine. The first call cannot be completed until the last call is returned. This requires local variables. MTBASIC supports a form of recursion: a subroutine may call itself. Since all variables in MTBASIC are global, true recursion is not possible. The sample recursive program in the MTBASIC manual illustrates a subroutine that calls itself. However, the same effect could be accomplished in any BASIC by using a GOTO statement and a decremented counter.

The test program involves calculating the Fibonacci number. This involves two calls to the recursive routine. I could find no way of implementing this as a true recursive routine in MTBASIC. The results show Aztec C to be the winner by a large margin over TURBO.

Recursion

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	45 sec	------	1:40
Compile Time	2:06	------	7 sec
Size	8K	------	9K

String operations are another facet of languages that are widely used. The test program involves concatenation, length function, and substring extraction. One important omission was noted in MTBASIC: the equality operator for strings is not supported. MTBASIC was in first place by a good margin for this trial. Aztec C is the slowest by a substantial margin with TURBO being only slightly faster. I should note that the test programs for MTBASIC and TURBO Pascal are quite similar while the C program achieves the same results with some additional code.

String Operations

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	23 sec	16 sec	21 sec
Compile Time	2:04	15 sec	7 sec
Size	8K	14K	9K

While using the compilers I noted a marked difference in the **screen display** of the resulting programs. Aztec C seemed to be significantly slower than the others. This suggested another test. In writing a simple program to display an 80 character line, I initially tried 5000 iterations with Aztec C. After more than 10 minutes I hit the reset button thinking I had mistakenly typed 50000. However, the program was what I intended–5000 iterations. As the times below show, Aztec C displays data on the screen comparatively slowly.

Screen Display

	Aztec C	MTBASIC	TURBO Pascal
Execution Time	2:53	1:37	1:01
Compile Time	2:03	15 sec	8 sec
Size	8K	14K	9K

The **source code** for the test programs has been included. Note that all programs **beep** at beginning and end. This was used as the basis for execution times and provided very reproducible results. The compile times vary somewhat depending on the state of the various disk files particularly for Aztec C which writes and reads intermediate files.

A very critical area for a 64K system is **relative code size**. To roughly estimate the amount of object code added for the same amount of source code, all of the test programs for each language were read into one program. The resulting program was then compiled and the code size noted. This was compared with a program that simply wrote **done** to the screen. My hope was this **quick and dirty** technique would show differences large enough to overshadow the uncertainty of the comparison. The results shown below indicate that TURBO Pascal produces very tight code. Aztec C adds far more code than either of the others. Note that using the floating point library added about 3K by itself.

Code Size

Aztec C	MTBASIC	TURBO Pascal
5475 bytes	1261 bytes	869 bytes

The documentation for these three languages differs greatly. Aztec C provides approximately 280 pages of informa-

cont. on page 30

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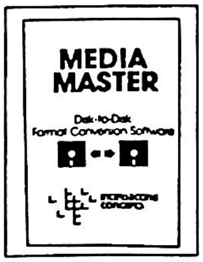

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tion in a small three-ring binder much like my OCC dBASE II manual. It has a table of contents but no index. It is very thorough, but addresses the experienced C programmer rather than the novice. The TURBO manual has 376 pages including a detailed table of contents and an index. Some of it is devoted to the MS/PC-DOS versions. It is all very readable. The MTBASIC manual has 105 pages without an index. Considering that it introduces some novel software for two different operating systems, it is too brief and vague. I would like to be told a lot more about the compiler in general and the multitasking aspects explained specifically.

Aztec C provides perhaps the most portable language in that it is one of a family of products with a member for just about every operating system. All the published test programs compiled and ran with no changes.

TURBO is not standard Pascal. For a detailed examination of this see the 1985 July *Dr. Dobb's*. It is available for MS/PC-DOS and has been announced for M68000 computers. MTBASIC is currently available for MS-DOS also.

What you have read so far does not give any impression of what it is like to work with these compilers.

Aztec C requires compiling, assembling, and linking. With floppies this takes considerable time. It does not produce code that is optimized for a Z-80. On the plus side, the compiler points out errors with messages to the screen or printer before assembly or linking and the error messages are accurate and meaningful. A section in the manual discusses probable causes.

The compiler, assembler, linker, header files, submit files, and utilities will take up one DD disk. That leaves the other for your editor, C programs, and the working space needed for intermediate files.

TURBO Pascal is a WordStar editor and a fast compiler. TURBO opens with a main menu and single letter commands allow you to move from editor to compiler, switch files, run programs or save files very quickly. Programs of several hundred lines can be compiled and executed in memory. Compiler errors are pointed out in the source code. Error messages are generally on target. There is also an option for finding run time errors. TURBO is a 30K file that should work well even with single density drives.

MTBASIC to a limited degree is similar to TURBO. The compiler checks your program line by line for undecipherable statements as you type it in. To compile and run your program you type **RUN**. For memory compilation, it seems as fast or faster than TURBO. At 34K it doesn't use much disk space. The bad news is:

1) Line numbers must be typed in.
2) Renumbering is done with a utility program that is supplied.
3) Editing means retyping the line correctly.
4) To find out what files are on a disk you must exit.
5) The compiler eliminates indenting.
6) **IF** supported but not **ELSE**.
7) No **WHILE** (**WHILE/WEND** in MBASIC).
8) No **CASE** or **ON** <expression> **GOTO**.

My opinion on multitasking from reading the manual and a limited amount of experimenting is that the program switches "tasks" after executing a number of statements. This number is specified for each task in the program.

What is my conclusion? All of these languages produces COM files that are much faster than interpreted languages. My impression is that all of the error messages were more meaningful than the interpreted BASICS I have used. Pascal should be easier to learn than C and TURBO Pascal should be easier to learn than BASIC.

TURBO and MTBASIC seem to use memory more efficiently than C. TURBO Pascal is the leader in several areas. It produces fast, compact programs and it is very easy to use. With supporting programs like TURBO Tutor and TURBO Database Toolbox it is useful for a variety of people and a variety of projects.

Maybe Borland will improve the file I/O in the next version. It does have one very serious flaw. Programs will abort if they are run on a system with less memory unless they were originally compiled to a smaller memory size. Several programs had to be recompiled when I acquired my Drive C which changes the CCP.

I would not be using Aztec C on my O-1 unless I had a Drive C or other RAM disk. The compile times are simply too long even with short test programs. The added overhead of switching from editor to compiler is very significant with floppies. Aztec C does not seem to produce very compact code when compared to TURBO or MTBASIC. I am impressed with the capabilities of C as a language but perhaps it is more at home with a 16-bit processor with lots of memory.

If I did not know Pascal and was not in the process of learning C, I think I would be glad to have MTBASIC available. It definitely is not a simple task to transfer MBASIC programs to MTBASIC. As it stands, I'm not sure what to use it for. My opinion is that a great deal has been sacrificed to implement multitasking. Some of these sacrifices will make it more difficult to develop larger programs.

I will continue to work in TURBO Pascal. I hope Borland improves the file I/O and makes it more standard. It has to be the best software I've ever purchased. Aztec C with Drive C is a good but expensive proposition. I am still looking for a BASIC compiler that will let me easily translate all those useful but slow MBASIC programs.

```
PROGRAM FPTEST;

(* THIS PROGRAM IS A TEST OF FLOATING POINT MATH SPEED. TRANSLATED
FROM THE C PROGRAM LIST ON PAGE 88 OF THE AUGUST, 1983 ISSUE OF
BYTE *)

CONST
    CONST1 = 3.141597;
    CONST2 = 1.7839032E4;
    COUNT = 1000;

VAR
    A,B,C : REAL;
    I : INTEGER;
```

cont. on page 36

CALENDAR

Under this heading you will find the listing of activities and events of Affiliated Member Organizations. Listings are the responsibility of the groups' officers. Officers must have corrections into FOG office by the first of the month prior to publication (December 1st for the January issue). For a list of other groups, see ***"CONTACTS"*** in back issues starting January, 1983, or send a stamped, self-addressed envelope to the FOG offices. Please include a note with your geographical area. To verify the meeting date, time, or location, call the number in the right hand column.

Date	City	A.M.O.	Day	Time	Meeting Address	Contact No.
Jul 17	Soldotna, AK	18-PenFOG	3rd Th	7:00pm	Kenai Peninsula Community College	907-262-5801
Jul 21	Anchorage, AK	63-GUIDE	3rd M	7:00pm	Mountain View Library	907-276-6484
Aug 14	Sitka, AK	83-BUG	2nd Th	7:30pm	Human Services Center, 207 Moller Dr.	907-747-8615
Aug 12	Ketchikan, AK	89-KCPM	2nd Tu	7:00pm	1182 Black Bear Road	907-225-9249
Jul 26	Homewood, AL	49-FAOUG	last Sa	1:00pm	Homewood Public Library, 1755 Oxmoor Road	205-669-4396
Aug 14	Huntsville, AL	125-NAOUG	2nd Th	7:00pm	First American Federal Savings & Loan, 4008 University Drive	205-881-0377
Aug 14	Ft. Smith, AR	23-AFOG	2nd Th	7:00pm	Lewis Paint and Supply, 4900 Wheeler Avenue	501-229-4701
Aug 5	Tempe, AZ	100-TOG	1st Tu	6:30pm	Tempe Public Library, Pyle Adult Center, Southern Ave at Rural Rd	602-969-2074
Jul 23	Stockton, CA	11-SOG	4th W	7:00pm	Citicorp Savings, 1810 Pacific Ave.	209-951-4701
Aug 11	Fresno, CA	35-FROG	2nd M	7:00pm	1434 West Shaw, Suite A	209-431-0480
Jul 24	Porterville, CA	66-SVFOG	4th Th	6:00pm	1502 North Lowery	209-781-4123
Jul 16	Long Beach, CA	130-OPEN	3rd W	6:30pm	C.S.U., Learning Assistance Center	213-498-4186 x 5350
Jul 3	Campbell, CA	1-1st FOG SV	1st Tu	7:30pm	Campbell Public Library, 30 North Central	408-371-8699
Jul 17	Cupertino, CA	1-1st FOG SV	3rd Th	7:30pm	Cupertino Public Library, 10400 Torre	408-371-8699
Aug 8	Castroville, CA	5-MBAOCUG	2nd F	7:00pm	Castroville Fire Station, Rec Room, Speegle & Pomber	408-728-1416
Jul 24	San Francisco, CA	2-SFCS	4th Th	7:00pm	St. Aidan's Church, Goldmine & Diamond Hgts.	415-929-0252
Aug 13	Oakland, CA	3-East Bay FOG	2nd W	6:00pm	B & B Electric, 2832 Ford Street	415-272-9099
Aug 12	San Rafael, CA	31-MOG	2nd Tu	7:00pm	CONFIRM	415-897-0629
Jul 16	Walnut Creek, CA	60-MTDOG	3rd W	7:00pm	Thurman Casey Memorial Library, 2661 Oak Grove Road	415-933-2665
Jul 21	Menlo Park, CA	68-SMOG^3	3rd M	7:30pm	Crane Place, 1331 Crane	415-325-2442
Aug 4	Menlo Park, CA	68-SMOG^3	1st M	7:30pm	Crane Place, 1331 Crane	415-325-2442
Aug 14	29 Palms, CA	114-HOG	2nd M	6:00pm	CONFIRM	619-367-9783
Jul 16	Arcata, CA	29-HOG	3rd W	7:15pm	Humbold State Univ., Science Bldg., Rm 126	707-445-2074
Aug 7	Santa Rosa, CA	56-No. Bay FOG	1st Th	7:30pm	Valley Oak Park Rec Hall, 2600 Northcoast St.	707-526-0250
Aug 3	Orange, CA	113-NOCOG	1st Su	2:30	Chapman College, Science Bldg., Rm 128	714-952-5627
Aug 5	Santa Maria, CA	42-SMOG	1st Tu	7:00pm	Sears Savings Bank, 401 South Broadway	805-937-1128
Aug 14	San Luis Obispo, CA	47-CCOG	2nd Th	7:00pm	TRW, 1050 Southwood Drive	805-528-2382
Jul 29	Santa Barbara, CA	69-OSBUG	last Tu	7:30pm	SB Planning Rm, 105 E. Anapamu St	805-687-8541
Aug 12	Pasadena, CA	84-OKOK	2nd Tu	6:30pm	Caltech, Winnette Lounge	818-794-3243
Aug 8	Chatsworth, CA	86-ONUG	2nd F	7:00pm	Wizard of OsZ 20630 Lassen Street	818-709-6202
Jul 22	San Fernando, CA	106-TUG-NET	4th Tu	7:00pm	Church of Christ, 1226 Glenoaks Blvd.(MS-DOS SIG)	818-994-6567
Jul 24	Sherman Oaks, CA	106-TUG-NET	4th Th	7:00pm	Central Savings, 4464 Van Nuys Blvd.(OSBORNE SIG)	818-994-6567
Aug 7	North Hollywood, CA	106-TUG-NET	1st Th	7:00pm	Valley Plaza Park Community Center, 12240 Archwood	818-994-6567
Aug 14	San Fernando, CA	106-TUG-NET	2nd Th	7:00pm	Church of Christ, 1226 Glenoaks Blvd.(KAYPRO SIG)	818-994-6567
Aug 14	Davis, CA	6-MUGSY	2nd Th	7:00pm	CONFIRM	707-557-5162
Aug 6	Sacramento, CA	61-SOG	1st W	7:30pm	SMUD Utility Bldg, 1708 59th St	916-444-7415
Aug 7	Denver, CO	4-DOG	1st Th	7:00pm	Clements Comm. Center 2nd Floor 1580 Yarrow	303-690-6301
Aug 13	Boulder, CO	65-BUG	2nd W	7:00pm	Colorado Univ. Business School, Rm 101	303-494-8741
Aug 6	Thornton, CO	85-MIST	1st W	7:00pm	12599 North Colorado Blvd	303-451-0456
Jul 16	Ft. Collins, CO	115-FTCOG	3rd W	7:30pm	C.S.U.Ind. Sciences Computer Lab, 200 W. Laurel, Rm 200	303-226-4156
Jul 16	Colorado Springs, CO	133-CSOG	each W	7:00pm	Hewlett Packard, Garden of the Gods, Spruce Rm	303-473-7647

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Date	City	A.M.O.	Day	Time	Meeting Address	Contact No.
Jul 23	Colorado Springs, CO	133-CSOG	each W	7:00pm	Hewlett Packard, Garden of the Gods, Spruce Rm	303-473-7647
Jul 30	Colorado Springs, CO	133-CSOG	each W	7:00pm	Hewlett Packard, Garden of the Gods, Spruce Rm	303-473-7647
Aug 6	Colorado Springs, CO	133-CSOG	each W	7:00pm	Hewlett Packard, Garden of the Gods, Spruce Rm	303-473-7647
Aug 13	Colorado Springs, CO	133-CSOG	each W	7:00pm	Hewlett Packard, Garden of the Gods, Spruce Rm	303-473-7647
Jul 24	Danbury, CT	40-DOG	4th Th	7:00pm	Qualcorp, Shelter Rock Road	203-775-1102
Aug 9	Danbury, CT	40-DOG	2nd W	7:00pm	Qualcorp, Shelter Rock Road	203-775-1102
Jul 17	Orlando, FL	16-GOCUG	3rd Th	7:00pm	Photosound of Orlando, 1812 N. Mills Ave	305-295-5689
Aug 7	Orlando, FL	16-GOCUG	1st Th	7:00pm	Photosound of Orlando, 1812 N. Mills Ave	305-295-5689
Jul 17	Maitland, FL	20-CFLOG	3rd Th	7:30pm	Lake Faith Villas Club Room, Maitland Blvd	305-282-4316
Aug 7	Maitland, FL	20-CFLOG	1st Th	7:30pm	Lake Faith Villas Club Room, Maitland Blvd	305-282-4316
Aug 10	Miami, FL	26-GCOUG	2nd Su	1:30pm	F.I.U Tamiami Campus, Building DM, Room 100	305-233-1779
Aug 14	Ft. Lauderdale, FL	91-FLOG	2nd Th	7:00pm	Harris Computer Sys, 2101 W. Cypress Creek	305-748-7237
Jul 22	Clearwater, FL	46-TBOG	4th Tu	7:30pm	St. Petersburg Times Building	813-584-4185
Aug 12	Tampa, FL	46-TBOG	2nd Tu	7:30pm	Jefferson High School	813-584-4185
Aug 12	Tallahassee, FL	77-TCPMUG	2nd Tu	7:30pm	Episcopal Church of the Advent, 815 Piedmont Drive	904-878-4592
Aug 13	Jacksonville, FL	98-JOUG	2nd W	7:00pm	JEA Bldg, 233 W. Duval Street	904-633-4920
Aug 4	Athens, GA	81-CP/M Athens	1st M	7:00pm	Athens Microcomputer Center, W. Broad Street	404-353-2127
Aug 11	Atlanta, GA	93-TOGA	2nd M	7:00pm	Emory University, Chemistry Bldg. Ampitheater, Decatur Road	404-636-1480
Call	Hilo, HI	124-HIFOG	????		Shayne Enterprises, 180 Kinoole Street	808-935-8678
Jul 28	Davenport, IA	102-QCOG	4th M	7:00pm	CONFIRM	319-386-3484
Aug 13	Davenport, IA	102-QCOG	2nd W	7:00pm	CONFIRM	319-386-3484
Jul 8	Des Moines, IA	12-Midwest FOG	2nd Tu	7:00pm	(odd months) Yonker's Computer Depot, 100 Merle Hay Plaza	515-270-3573
Aug 12	Ames, IA	12-Midwest FOG	2nd Tu	7:00pm	(even months) Ames Public Library	515-270-3573
Aug 14	Sioux City, IA	38-SOG	2nd Th	7:30pm	Western Iowa Tech., Room 508	712-252-2182
Jul 20	River Grove, IL	80-CFOG	3rd Su	1:00pm	College Center Bldg, Triton College, 2000 Fifth Ave	312-654-0986
Aug 9	River Grove, IL	80-CFOG	2nd Sa	1:00pm	College Center Bldg, Triton College, 2000 Fifth Ave	312-654-0986
Aug 7	W. Lafayette, IN	34-HOG	1st Th	7:00pm	CONFIRM	317-474-0253
Aug 4	Bloomington, IN	87-IOU	1st M	7:30pm	Indiana Univ, Cyclotron Facility, 2401 M. B. Sampson Lane	812-334-3234
Jul 22	Wichita, KS	21-OPEK	4th Tu	7:30pm	St. Paul's Methodist Church, 1356 Broadway	316-832-0447
Aug 5	Hutchinson, KS	137-HUTCH	1st Tu	7:30	Hutchinson Public Library	316-663-7678
Aug 9	Louisville, KY	64-PCCL	2nd Sa	1:00pm	Univ. of Louisvile, Burhans Hall Rm 202, Shelbyville Road	502-451-0508
Aug 16	Lexington, KY	32-KOG	3rd Sa	12:00n	213 Funkhouser Building, University of Kentucky	606-269-1684
Aug 11	Baton Rouge, LA	103-FLOG	2nd M	7:00pm	Johnson Equipment Co., 4264 Perkins Road Co.	504-923-0888
Jul 29	Bedford, MA	122-BOG	last Tu	7:30pm	Mitre Corp., Route 62	617-484-1863
Aug 8	Lexington, MA	122-BOG	2nd F	7:30pm	Honeywell Electro Optical Div, Route 2A	617-484-1863
Call	Silver Spring, MD	96-ERC-OUG	????		CONFIRM	301-622-4400 x 5331
Jul 16	Columbia, MD	101-OSBUG	3rd W	7:30pm	Florence Bain Senior Center	301-997-3246
Jul 21	Portland, ME	136-SMOG	3rd M	7:00pm	Portland Jetport Conference Room	207-772-1616
Jul 21	Dearborn, MI	14-DeFOG	3rd M	7:30pm	Ford Tech Center Cafeteria, 1700 Rotunda Dr	313-626-6641
Jul 17	Ann Arbor, MI	37-TOGA²	3rd Th	7:00pm	Neuro Science Bldg. Univ. of MI, 1103 East Huron St	313-665-5753
Aug 12	Duluth, MN	118-DSO	2nd Tu	7:00pm	1440 90th Avenue West	218-626-3344
Aug 14	St. Paul, MN	111-TCOG	2nd Th	7:00pm	Univ. of MN,St. Paul Campus Rm B-45 Classrm Off Bldg	612-698-0225
Jul 22	St. Louis, MO	55-SLOG	4th Tu	7:00pm	Thornhill Library, 12863 Willowyck	314-991-4399
Jul 29	Kansas City, MO	97-MIZOG	Last Tu	7:00pm	TWA Bldg, 13th & Baltimore	913-491-0690
Aug 5	Jackson, MS	58-MCPM	1st Tu	7:00pm	R & D Center, Ridgewood Road	601-856-2509
Aug 11	Charlotte, NC	71-LOGIC	2nd M	7:30pm	Home Federal Savings and Loan, Carmel Road	704-377-1154
Jul 14	High Point, NC	107-TROGIC	2nd M	7:30pm	(Odd Months) High Point College, Science Building, Basement	919-766-5530
Aug 11	High Point, NC	107-TROGIC	2nd Th	7:30pm	(Even Months) High Point College, Science Building, Basement	919-766-5530
Jul 21	Raleigh, NC	8-ROCC	3rd M	7:30pm	CONFIRM — Dreyfus Aud., Research Triangle Inst.	919-782-9576
Call	Fargo, ND	117-O/KUG	3rd Th	7:00pm	NDSU, Civil Engineering, Room 216	701-280-1700
Aug 12	Lincoln, NE	39-Lincoln LOG	2nd Tu	7:30pm	5530 O Street	402-761-3393
Jul 16	Linden, NJ	138-JOG	3rd W	7:30pm	Public School #3, Greer Avenue	201-272-2073

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Date	**City**	**A.M.O.**	**Day**	**Time**	**Meeting Address**	**Contact No.**
Jul 31	Albuquerque, NM	127-AOG	last Th	7:00pm	CONFIRM	505-268-3606
Aug 12	Albuquerque, NM	127-AOG	2nd Tu	7:00pm	CONFIRM	505-268-3606
Jul 16	Las Vegas, NV	25-VOG	3rd W	7:00pm	CONFIRM	702-452-2544
Aug 12	New York, NY	135-NYOUG	2nd Tu	7:00pm	73 Franklin Street	212-594-5976
Aug 3	Liverpool, NY	82-SOUP	1st Su	2:00pm	8371 Red Wing Drive	315-622-9209
Aug 13	W. Hempstead, NY	88-LION	2nd W	7:30pm	Adelphi Univ Cont Ed Ctr, Room 110, Eagle Ave	516-481-0129
Aug 12	Rochester, NY	132-FROG	2nd Tu	7:30pm	Monroe County Cooperative Ext. Center, 249 Highland Avenue	716-671-5838
Jul 16	Rye, NY	104-WOG	3rd W	7:15pm	Westchester Federal Savings Bank, 67 Purchase Street	914-725-1098
Aug 4	Oberlin, OH	9-^Ob^Os	1st M	7:30pm	Oberlin College, Rice Faculty Lounge, W. College Street	216-775-8706
Aug 12	Uniontown, OH	44-AKCAN	2nd Tu	6:30pm	13100 Cleveland Avenue NW	216-837-8926
Aug 13	Cleveland, OH	75-COG	2nd W	7:00pm	United Way, 3100 Euclid Avenue	216-888-2078
Jul 15	Cincinnati, OH	27-COG	3rd Tu	7:00pm	Central Trust Center 6th floor, 5th & Main Streets	513-232-4076
Jul 26	Cincinnati, OH	27-COG	4th Sa	2:00pm	2063 Beechmont	513-232-4076
Aug 9	Cincinnati, OH	27-COG	2nd Sa	2:00pm	2063 Beechmont	513-232-4076
Aug 5	Dayton, OH	79-DOUG	1st Tu	7:30pm	St. Paul's Episcopal Church, 33 Dixon Drive	513-434-8207
Aug 13	Oklahoma City, OK	67-OKLOG	2nd W	7:30pm	Southwestern Bell, 111 Dean A McGee, Blue & Gold Rm	405-360-2141
Jul 24	Tulsa, OK	51-OUT	4th Th	8:00pm	Sheridan Library, 62 North Sheridan Road	918-587-3918
Call	Medford, OR	54-RVOG	????		CONFIRM	503-773-1222
Jul 23	Portland, OR	57-PMS	4th W	7:30pm	Bonneville Power Admin. Aud., 1002 NE Holladay St.	503-228-6345
Aug 3	Eugene, OR	128-LOCUG	1st Su	7:00pm	Farwest Federal Bldg., 96 E. Broadway	503-747-8242
Aug 9	Philadelphia, PA	121-PhROG	2nd Sa	9:30am	Merck, Sharp & Dome, Sumneytown Pike	215-648-5862
Jul 27	Pittsburgh, PA	50-TROG	4th Su	2:30pm	Mellon Science Building, Duquesne Univ.	412-765-1766
Call	Lancaster, PA	74-LOG	????	7:30pm	CONFIRM	717-285-4940
Jul 17	Lemoyne, PA	92-MIDPOG	3rd Th	7:30pm	One Stop Computer, 65 N. 5th St	717-243-7858
Jul 22	Greenville, SC	41-POGO	4th Tu	6:30pm	C. Douglas Wilson, 201 E. North Street	803-233-3434
Jul 16	Oak Ridge, TN	13-SMOG	3rd W	7:30pm	(odd months) ECS 136 Fairbanks	615-483-6857
Aug 20	Knoxville,TN	13-SMOG	3rd W	7:30pm	(even months) 11505 Kingston Pike	615-483-6857
Jul 24	Nashville, TN	119-MidTOG	4th Th	7:00pm	Cumberland Museum, 800 ridley blvd.	615-244-5343
Jul 22	Memphis, TN	15-MOG	4th Tu	6:30pm	Poplar/White Station Library	901-522-1234
Jul 17	College Station, TX	43-AGGNOG	3rd Th	5:30pm	A & A Building, Texas A & M Univ. Room 503	409-845-7770
Jul 16	Austin, TX	7-AEIOU	3rd W	6:30pm	Old Quarry Library off Far West Blvd. 7051 Village Center	512-836-3010
Jul 18	Houston, TX	76-OUCH	3rd F	7:30pm	Univ. Houston, 101 Farish Hall, KIVA Rm. (Use lot 1341 off Cullen)	713-931-1096
Aug 9	Houston, TX	108-CLOG	2nd Sa	9:00am	Gilruth Rec. Center, Johnson Space Center	713-332-0859
Jul 27	Amarillo, TX	28-POG	4th Su	2:30pm	Downtown Branch Amarillo Public Library	806-355-7509
Aug 10	Amarillo, TX	28-POG	2nd Su	2:30pm	Downtown Branch Amarillo Public Library	806-355-7509
Aug 11	Lubbock, TX	134-LOG	2nd M	7:30pm	Texas Tech Univ. Law Bldg., 19th & Hartford Room 202	806-742-3920
Jul 16	Provo, UT	30-KAOS	3rd W	7:00pm	Wiltec Research Co. 488 South 500 West	801-225-8293
Jul 17	Salt Lake City, UT	105-SMOG	3rd Th	6:00pm	Sofshop, 2166 Highland Drive	801-268-2831
Jul 17	Richmond, VA	52-CVOG	3rd Th	7:00pm	Red Cross Bldg, 4th and Main	804-282-9545
Jul 19	Norfolk, VA	78-TOG	3rd Sa	9:00am	ECPI, 3661 East Virginia Beach Blvd.	804-497-5556
Jul 17	St. Croix, VI	70-StCOUG	3rd Th	6:30pm	St. Croix Country Day School Library	809-773-7551
Aug 4	Tacoma, WA	72-TOG	1st M	7:00pm	Parkland Library (Basement Mtg Rm) 404 Garfield So.	206-752-5582
Jul 16	Federal Way, WA	99-SKOG	3rd W	7:30pm	Highline Comm. Coll, Gold Rm — Bldg 4	206-643-3521
Jul 21	East Wenatchee, WA	10-WOG	3rd M	7:00pm	211 Ridgemont Drive	509-884-3279
Aug 14	Richland, WA	19-TROG	2nd Th	7:00pm	Richland Public Library, Swift & Northgate	509-967-2430
Aug 13	Spokane, WA	123-SMUG	2nd W	7:00pm	Komputer Korner, N. 2001 Monroe	509-482-7989
Aug 21	Milwaukee, WI	22-MilwOG	3rd M	7:00pm	Math Bldg. Rm 495, Univ. of W. M.	414-255-0440
Jul 16	St. Albans, WV	59-Valley FOG	3rd W	6:30pm	Public Library, 6th Ave. and 4th Street	304-727-8716
Jul 27	Ashburton, Aust	131-VOUG	4th Su	2:00am	(odd months) Ashburton Public Library, 152 High Street	03-459-8934
AUg 27	Melbourne, Aust	131-VOUG	4th W	6:00pm	(even months) RMIT, Swanson St., Floor 9, Bldg. 12, Rm 908	03-459-8934
Aug 11	Edmonton, Alta	45-KOG	2nd M	7:30pm	Alberta Vocational College, 10215 - 108 Street	403-464-5088
Aug 11	Calgary, Alta	94-COUG	2nd M	7:30pm	616 Macleod Trail S, Seminar room 3,	403-239-5685

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Date	City	A.M.O.	Day	Time	Meeting Address	Contact No.
Aug 9	Vancouver, B.C.	17-VPCC	2nd W	7:30pm	Hastings Community Center, 3096 East Hastings	604-298-6990
Jul 17	Victoria, B.C.	48-VICOG	3rd Tu	7:30pm	Canadian Forces Base Esquimalt	604-383-1512
Jul 28	Toronto, Ont	120-OUCT	last M	7:00pm	Parkdale Public Library, 1303 Queen St. W.	416-533-1531
Aug 12	London, Ont	95-LOG	2nd Tu	7:30pm	Univ. of W. Ont., Elborn College, Room 2130	519-438-7224 x 267
Aug 7	Montreal, P.Q.	73-Microcozm	1st Th	6:30pm	Hillside Armoury, 3 Hillside Lane	514-932-4164
Call	Charlottenlund, Denmark	126-FORMICRO	????	5:00pm	CONFIRM	45-1-631760
Aug 11	Paris, France	110-OUF	2nd M	6:30pm	Centre Andre Malraux, 78 Bd Raspail	1-43-44-82-65
Aug 5	Tel Aviv, Israel	33-IOUG	1st Tu	6:30pm	Productivity Institute, 30 Sderot Yehudit	03-237496
Aug 12	Auckland, New Zealand	53-NZOG	2nd Tu	8:00pm	Auckland University, Human Sciences Building, Rm 336	275-4310
AUg 6	Wellington, New Zealand	109-CROG	1st W	7:30pm	Cafeteria of Trade Span (N Z), 300 Tranaki St.	0064-4-791-172
Jul 15	Edenvale, So Africa	90-JOG	3rd Tu	6:30pm	Civic Centre	011-51-6304
Aug 8	Hattersheim, W. Ger.	24-AGOG	2nd F	7:00pm	Hattersheim Posthof	061-52-4210
Jul 16	Kaiserslautern, W. Ger.	62-FROG	3rd W	7:00pm	Ramstein Air Base, Ramstein Rec. Center	49-6371-13117
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```
BEGIN
WRITE(CHAR(7));
A := CONST1;
B := CONST2;
FOR I := 0 TO COUNT DO BEGIN
   C := A * B;
   C := C / A;
   C := A * B;
   C := C / A;
   C := A * B;
   C := C / A;
   C := A * B;
   C := C / A;
   C := A * B;
   C := C / A;
   C := A * B;
   C := A * B;
   C := C / A;
   C := A * B
END;
WRITELN(CHAR(7),'DONE')
END.
```

```
5   ' MTBASIC PROGRAM TO TEST FLOATING POINT OPERATIONS
6   ' TRANSLATED FROM THE C PROGRAM IN BYTE, AUGUST, '83, P. 88
10  REAL CONST1:  CONST1=3.14159
20  REAL CONST2:  CONST2=17800
25   A=CONST1:  B=CONST2
30  INTEGER I,COUNT:  COUNT=1000
40  REAL A,B,C
45  PRINT CHR$(7)
50  FOR I=1 TO COUNT
60   C=A * B
70   C=C / A
80   C=A * B
90   C=C / A
100   C=A * B
110   C=C / A
120   C=A * B
130   C=C / A
140   C=A * B
150   C=C / A
160   C=A * B
170   C=C / A
180   C=A * B
190  NEXT I
200  PRINT CHR$(7)
END
```

```
5   ' MTBASIC PROGRAM TO TEST FILE COPYING SPEED
10  STRING A$(90),B$(30)
15  PRINT CHR$(7)
20  OPEN 0,1,''INFILE''
30  OPEN 1,2,''OUTFILE''
40  FILE 1
50  INPUT A$
60   IF ERR = 10 THEN GOTO 100
70  FILE 2
80  PRINT A$
90  GOTO 40
100   B$=ERR$
110  FILE 0
120  PRINT B$
130  CLOSE 1
140  CLOSE 2
145  PRINT CHR$(7)
150  STOP
END
```

```
/* adapted from the program appearing in Byte, August, '83, p. 88
   */
/* simple benchmark for testing floating point speed of c librar-
   ies does repeated multiplications and divisions in a loop that
   is large enough to make the looping time insignificant */

#define const1 3.141597E0
#define const2 1.7839032E4
#define count 1000
main ()
        {
        double a, b, c;
        int i;
        char bell = 7;

        printf(``%c1000 iterations:  '',bell);
        a = const1;
        b = const2;
        for (i = 0; i < count; ++i)
                {
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                c = a * b;
                c = c / a;
                }
        printf(``%cDone\n'',bell);
        }
```

```
/* file copy benchmark - copies a file one byte at a time */
/* adapted from the program appearing on p. 114 of BYTE, August,
   '83 */

#include ``stdio.h''

main(argc, argv)
int argc;
char *argv[];
```

```
{
        int      c;
        FILE     *infile, *outfile;
        char bell=7;

        if (argc < 3)
                errexit(''Usage: copy oldfile newfile'', NULL);
         if (strcmp(argv[1], argv[2] ) == 0 )
                errexit(''File names must be different'', NULL);

        if (( infile = fopen(argv[1], ''r'')) == NULL)
               errexit(''Can't open'',argv[1] );
        if (( outfile = fopen(argv[2], ''w'' )) == NULL)
               errexit(''Can't create'', argv[2]);

        printf(''%cFile %s '',bell, argv[1]);

        while ((c = getc(infile)) != EOF)
               putc(c, outfile);

        fclose(infile);
        fclose(outfile);

        printf(''copied to %s.\n%c'',argv[2],bell);
        exit(0);
}
errexit(s1,s2)          /* print error message and die */
char *s1, *s2;
{
        printf(s2 == NULL ? ''%s\n'' : ''%s %s\n'',s1,s2);
        exit(-1);
}
```

```
{ this program tests file copying speed }
{ translated from the C test program on page 114 of the august '83
BYTE }

program copy;

type
     string28 = string[28];

const
     errmsg : array[1..4] of string28 = ('Usage: copy',
                                         'oldfile newfile',
                                         'File names must',
                                         'be different',
                                         'Can't open',
                                         'Can't create');

var
   infile,outfile :  TEXT;
   achar : char;

procedure errexit(var msg : string28);

begin
     writeln(msg);
     halt
end;

begin (* main *)
if paramcount <> 2 then
       errexit(errmsg[1]);

if paramstr(1) = paramstr(2) then
       errexit(errmsg[2]);

assign(infile,paramstr(1));
{$I-} reset(infile); {$I+} ;
if ioresult <> 0 then
       errexit(errmsg[3]);

assign(outfile,paramstr(2));
{$I-} rewrite(outfile) {$I+} ;
if ioresult <> 0 then
       errexit(errmsg[4]);

writeln(char(7),'File ',paramstr(1));

while not EOF(infile) do begin
   read(infile, achar);
   write(outfile,achar),
end;

close(infile);
close(outfile);

writeln('copied to ',paramstr(2),char(7));

end.
```

```
1   ' SIEVE OF ERATOSTHENES IN MTBASIC
5   INTEGER M,I,FLAGS(8191),K,PRIME,COUNT
10   PRINT CHR$(7)
15   FOR M=1 TO 10
20    COUNT=0
25   FOR I=1 TO 8190
30    FLAGS(I)=1
35   NEXT I
40   FOR I=1 TO 8190
45    IF  FLAGS(I) = 0 THEN  GOTO 90
50    PRIME=I + I + 3
60    K=I + PRIME
65    IF  K > 8190 THEN  GOTO 85
70    FLAGS(K)=0
75    K=K + PRIME
80   GOTO 65
85    COUNT=COUNT + 1
90   NEXT I
95   NEXT M
100   PRINT COUNT, ''PRIMES'',CHR$(7)
END
```

```
/* Prime number benchmark adapted from the Aug. 1983 issue of
   BYTE, page 112 */

#define SIZE       8190 /* size of array */
#define FALSE         0
#define TRUE          1
#define NTIMES       10 /* number of iterations */

main()        /* compute primes using sieve of Eratosthenes */
```

```
{
        int      prime.i.k.j. count ;
        char flag[SIZE  + 1];
        char bell - 7;

        printf(``%c10 iterations:  ``.bell);

        for (i=1; i<= NTIMES; i++) {
                count = 0;
                for (j - 0; j <= SIZE; j++)
                        flag[j] = TRUE;

                for(j = 0; j <= SIZE; j++) {
                        if (flag[j] == TRUE ) {
                                prime = j + j + 3;
                                for(k = j + prime; k <= SIZE; k
                                += prime)
                                        flag[k]   =   FALSE;
                                        /*discard
                                        multiples*/
                                count++;
                        }
                }
        }
printf(``%c%d primes.\n``.bell.count);
exit(0);
}
(* ERATOSTHENES PRIME-NUMBER PROGRAM IN PASCAL *)
PROGRAM PRIME;
CONST
   SIZE = 8190;
VAR
   FLAGS : ARRAY[0..SIZE] OF BOOLEAN;
   I.PRIME.K.COUNT.ITER : INTEGER;
BEGIN
   WRITELN('10 ITERATIONS'.CHAR(7));
   FOR ITER := 1 TO 10 DO BEGIN
      COUNT := 0;
      FOR I := 0 TO SIZE DO
         FLAGS[I] := TRUE;
      FOR I := 0 TO SIZE DO
         IF FLAGS[I] THEN BEGIN
         PRIME:= I+I+3;
 {           WRITELN(PRIME);           }
            K := I + PRIME;
            WHILE K <= SIZE DO BEGIN
               FLAGS[K] := FALSE;
               K := K + PRIME
            END;
            COUNT := COUNT + 1
         END;
      END;
   WRITELN(COUNT, 'PRIMES'.CHAR(7))
END.
```

PROGRAM FIB:

```
/* Program to compute the Fibonacci series recursively */
/* adapted from BYTE, August '83, p. 114, Vol. 8, #8 */

#include ``stdio.h``

#define NTIMES  5 /* number of times to compute Fibonacci value */
#define NUMBER 23 /* biggest one we can compute as a signed int */

main ()          /* compute Fibonacci value */

{
        int     i;
        int value, fib();
        char bell = 7;

        printf(``%c%d iterations: ``.bell.NTIMES);

        for (i=1; i <= NTIMES; i++)
                value = fib(NUMBER);

        printf(``%c  fibonacci(%d)  =  %u.\n``.bell.NUMBER.
        value);
        exit(0);
 }
int   fib(x)              /*   compute   fibonacci   number
                               recursively */
int x;
{
        if (x > 2)
                return (fib(x-1) + fib(x-2));
        else
                return (1);
}


(* Translated with adaptations from the C program appearing on
page 88 of the August, '83 issue of BYTE magazine *)

CONST
  NTIMES = 5;
  NUMBER = 23;

VAR
    J.I : INTEGER;

FUNCTION FIBO(X : INTEGER) : INTEGER;

BEGIN

IF X > 2 THEN
    FIBO := (FIBO(X-1) + FIBO(X-2))
ELSE
    FIBO := 1

END;

BEGIN

WRITELN(CHAR(7).NTIMES:2.'ITERATIONS');

FOR I := 1 TO NTIMES DO BEGIN
     J := FIBO(NUMBER);
```

```
END;
WRITE(CHAR(7),'fibonacci(',NUMBER,'):',J:6);
END.
```

```
5  ' MTBASIC PROGRAM TO TEST DISPLAY SPEED
10  INTEGER I
20  STRING S1$(80)
30   S1$=''abcdefghijklmnopqrstuvwxyz1234567890
     ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890********''
35  PRINT CHR$(7)
40  FOR I=1 TO 1000
50  PRINT S1$
60  NEXT I
65  PRINT CHR$(7)
END
```

```
/* This program writes an 80 character line to the screen ntimes
   */

#include ''stdio.h''
#define ntimes 1000
char s1[85] = ''abcdefghijklmnopqrstuvwxyz1234567890
          ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890********'';
char bell = 7;

main()
{
    int i;

    putchar(bell);

    for(i=1; i <= ntimes; i++)
        printf(''%s\n'', s1);

    putchar(bell);
 }
```

PROGRAM TEST:

```
(* this program tests the speed of screen display *)

const
    str = 'abcdefghijklmnopqrstuvwxyz1234567890ABCDEFGHIJ
          KLMNOPQRSTUVWXYZ1234567890********';
    ntimes = 1000;

var
  i : integer;

begin

write(char(7));

  for i := 1 to ntimes do
      writeln(str);

write(char(7));

end.
```

```
5  ' MTBASIC PROGRAM TO TEST SPEED OF BASIC STRING OPERATIONS
10  STRING S1$(26),S2$(26),S3$(52)
20  INTEGER I,J,NTIMES
30   S1$=''abcdefghijklmnopqrstuvwxyz''
40   S2$=''ABCDEFGHIJKLMNOPQRSTUVWXYZ''
50   NTIMES=10000
51  PRINT CHR$(7)
60  FOR I=1 TO NTIMES
70   S3$=CONCAT$(S1$,S2$)
80   J=LEN(S1$)
100   S3$=MID$(S1$,6,13)
102  NEXT I
120  PRINT CHR$(7)
END
```

PROGRAM STRING:

```
(* This program tests the basic string operations: concatena-
   tion, length, and copying *)

const
    s1 : string[26] = 'abcdefghijklmnopqrstuvwxyz';
    s2 : string[26] = 'ABCDEFGHIJKLMNOPQRSTUVWXYZ';
    ntimes = 10000;

var
   i,j : integer;
   s3 : string[52];

begin

write(char(7));

for i := 1 to ntimes do begin

   s3 := concat(s1,s2);
j := length(s1);
s3 := copy(s1,6,13);

end;

write(char(7));

end.
```

```
/* Program to test the basic string handling functions: concat-
   enation, length, and copy */

#include ''stdio.h''
#define ntimes 10000
char s1[27] = ''abcdefghijklmnopqrstuvwxyz'';
char s2[27] = ''ABCDEFGHIJKLMNOPQRSTUVWXYZ'';
char bell = 7;

main()
{
    int i, j;
    char s3[53];

    putchar(bell);

    for(i=1; i <= ntimes; i++)
        {
            strcpy(s3, s1);
            strcat(s3, s2);
            j = strlen(s1);
            strncpy(s3, s1+5, 13);
            s3[13] = '\0';
        }
    putchar(bell);
 }
```

cont. on page 41

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* * * * * * *

CLIP: Command Line Interpretative Program

by Paul O'Nolan

CP/M doesn't do much. With CLIP, a "command line interpretive program" from Artisoft (formerly Thoughtware) Inc., you can give your CP/M system a shot in the arm that will make it as different from its normal spartan little self as the Incredible Hulk is from his alter ego.

It's what CP/M has not done to deserve this! It could never have become the standard operating system of much of the 8-bit microcomputer world without being something of a lowest common denominator. CLIP is a command language which replaces CP/M's command processor with a powerful shell that has many features of the much vaunted UNIX operating system.

CLIP's comprehensive line editing facilities make it possible to edit command lines as though with a word processor. CLIP also maintains a stack of the last 10 commands used; any of which may be recalled at a keystroke. This feature is similar to that provided with Unix's "history" command, and to that enabled by function keys on many PC's. The cursor movement and many of the editing commands will seem familiar to users of WordStar. A nice addition is the ability to toggle case from upper to lower and vice versa. These editing facilities are available when running any standard CP/M program.

The command language features over 50 commands with argument and switch parsing, file I/O, symbol substitution, looping, tracing and conditional execution!

It also has a few quirks. For instance, Artisoft claims that CLIP is capable of branching. It isn't. CLIP simply doesn't have a GOTO command. This would not be a serious deficiency if it had an adequate supply of control structures, DO WHILE's, REPEAT UNTIL's and such like. There is a difference between conditionally branching to a label and conditionally executing some code. Though the resulting program appears similar to the user, the price to be paid by CLIP users is a disk file for every loop. Each file, called a Macro, can be executed by invoking its name.

CLIP commands have the form:

```
COMMAND/switches argument |/switches argument|
```

e.g.:**SET/R readonly.txt**

The SET command above changes the system attributes of a file, in this case making it "read only". Here CLIP has emulated a function performed by CP/M's cumbersome STAT command. Many of CP/M's commands have enhanced equivalents under CLIP. Several files may be deleted using CLIP's DEL command:

```
DEL thisfile.txt thatfile.txt jnk.lst
```

Using CP/M you'd have to ERA these files one at a time. Neither CP/M nor CLIP provide a "/CONFIRM" option for the delete command, which is a pity. However, with CLIP you can write a small command file to provide such a facility i.e. you create a new command.

CLIP features a simple "universal text editor" called UEDT for writing command files without exiting from CLIP. Although it is adequate and convenient for working with short files, this line-based editor is rather primitive and is not really suitable for use with files longer than a few lines. It lacks, among other things, a command for moving text.

Another of CLIP's built-in features is a reverse polish notation, (RPN), calculator with a 10-level stack. It can perform simple integer calculations in any radix (base) from 2 to 16.

In addition to the normal arithmetic operations (+, -, /, * and #; # = MODulus) the calculator can perform several logical operations: AND, OR, NOT and XOR.

The ability to display results in octal, hexadecimal or even binary is a rather handy feature which compensates somewhat for the RPN notation, which many people dislike.

The CLIP package optionally includes Artisoft's Software Tools and an encryption program. The software tools require CLIP in order to work, and include many useful utilities, (sorting, pattern matching, file comparison, etc.). The encrypt program requires a password that may be up to 12 characters in length to encrypt and decrypt files. The encryption algorithm uses an 81-bit key to encode the data and it is safe to say that not even the National Security Agency could recover a file for you if you forgot the password.

I have left CLIP's most outstanding features until last: redirection and piping.

What's it all about anyway? Normally, program input comes from the keyboard or a file, and output goes to the screen, a file, or to the printer. With redirection you can get a program to change where it sends output or gets input from, e.g., using CP/M, if you type **DIR** a list of files is sent to the screen. With CLIP you can type **DIR/>LIST.DIR** and the output from the directory program is written to a file called LIST.DIR. **DIR/>>MEMO *.COM** appends a directory of COM files to a file called MEMO.

Similarly, **/<&LIST** takes input from the file LIST instead of the keyboard. The ampersand tells CLIP to echo the input to the screen. Pipes, which are represented as a stile: ¦, allow the output of one program to be "piped" as input to another program.

Thus: **program1 ¦ program2** is equivalent to **program1/>file.tmp; program2/<file.tmp**. Redirection is very useful in preparing program documentation and for saving time on routine data entry. Piping allows you to leave a whole series of programs running, and queued to run, without any

operator intervention — you can go home/out for the evening/weekend!

CLIP replaces CP/M's console command processor, (CCP), and works with all standard CP/M programs. It does not execute any direct calls to the Basic Input/Output System, (BIOS), and it is not guaranteed to work with programs that do. I did not encounter any difficulty using it, and I tried it with a variety of programs.

CLIP consists of two parts. One occupies 5.2K of memory continuously, and traps CP/M system calls. The command line interpreter part is a 19K program that is swapped in and out of memory as needed.

Transient information is stored in an overlay file on disk A. CLIP is slightly slower than plain vanilla CP/M in the execution of certain commands, TYPE for instance, but overall it performs well. It can keep three files open at once, which is not a lot, but then dBASE II gets by with two.

CLIP is installed by typing **CLIP** at CP/M's A> prompt and exited by typing **BYE** at CLIP's A) prompt. Note the greater than sign changes to a parenthesis. It is possible to change CLIP's prompt to any character string, so if you can change it to a $ or a > should you happen to homesick for a computer who greeted you thus, or if you require a more obviously different prompt from CP/M.

CLIP is not difficult to use, but that statement is not the same as easy! You must read through the manual and experiment as you go in order to learn how to write, edit and debug macros. However, the command stack, command editing, redirection, and piping can all be used easily and quickly.

CLIP's INITIAL command enables you to specify the name of a macro to be executed on start-up. Then, if CLIP is invoked when a disk is booted it can present you with a menu of functions, (e.g. a list of programs that may be run).

You could even use CLIP to hide CP/M altogether, making the entire user interface menu-driven. Since it traps ^C's (control C's) and reboots on disk operating system errors, the INITIAL macro facility could be used to protect a disk by requiring entry of a password to use it.

On-line help is available using the **HELP** command. It works, but I'm not sure that it's such a good idea. First, the information is readily available in the manual and with the commands listed in alphabetical order it takes only a second to find any required information. Second, HELP uses up disk space. Two versions of it may be installed, a brief one and a "verbose" one, taking 20K and 60K of disk space respectively.

The error handling is fair. Macros crash if a ↵ (return) is typed where a string input is expected, unless the variable already contains an appropriate string. It is up to you to remove errors in debugging your macros, and better to prevent them.

CLIP has a stock of about 50 error messages all of which are brief. It issues the appropriate message but does not say exactly where the error occurred. To discover this the TRACE option must be enabled and the macro, (or set of nested macros), must be re-executed, whereupon each command line will be displayed as it is executed.

If CLIP's overlay file containing transient information, (the values of variables, etc.), is corrupted, it will not function correctly, and the file should be erased and CLIP restarted. No action of CLIP's that I could discover will cause this to happen.

You can expand the on-line documentation available using the HELP command to provide information on new topics. This is accomplished by means of a HELPGEN program that accompanies the package.

The manual is everything that a manual should be, from the front page to the index, and it is also attractive. Mine came in a black plastic ring binder containing about 60 pages.

The text looks like high quality plotter lettering and is arranged two columns to a page with plenty of white space. In content and presentation it is the best I have seen for any program in CLIP's price range. It is clear and concise, and while I found no errors I did spend a fruitless hour trying to figure out how to redirect printer output to a file. The manual did not make it explicitly clear that this facility was not provided. I thought, wrongly, that I could trick CLIP into doing it one way or another. This feature has now been added to CLIP (V2.2) and works well.

Interestingly, because it shows an uncommon openness, Artisoft provides some source code from the start of CLIP and instructions on patching it. User-developed time and date

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routines may be incorporated.

The manual clearly states that instructions on how to patch CLIP to fix any problems discovered will be distributed to licensed users. Notices of updates will be sent for one year. Artisoft has an 800 telephone number which customers can use to call for help should they need it. CLIP performs so well that I haven't needed to call it. However, I believe that the caliber of support available could hardly fall below the standard of work apparent in this product.

There are few better value programs available to the user of a CP/M based microcomputer. For a modest amount of money CLIP adds many desirable features not found in CP/M which greatly enhances its power and ease of use.

It is available for $49.95 from:

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* * * * * * *

PCFILE

by Jim Simpkins

With PCFILE (FOG/APP.028 and 029) I went through a painful learning curve; the .DOC file leaves much to be desired (typical?).

One of the first things to learn is WAIT, "WWAAAIIITT". All of the commands on the MAIN MASTER MENU react INSTANTLY when I type the number or three-letter code. A ⏎ will send me back to the MENU; a wait of several seconds will let me see if I need to push ⏎, which I must do very often within a command.

When I boot PCFILE, I get a WordStar-like delay (seems like an hour), and finally I am asked what disk to use for data. I type **B** (or **b**) and PCFILE responds:

These files are defined: (my list)

```
        NEW1     REV1
```

Just as in WordStar, I type the complete name (lower case is OK) or name a new file.

If I want to do something with a record:

(1) ADD
(2) MODIfy
(3) DELete
(4) DISplay
(5) FINd

I type the number or code, then WAIT. I am offered a mini-MENU; ONLY **#n**, + and - (or the DATA in the KEY FIELD) work for me, and even then I have little hope of going directly to the record I want because each SORt changes the record sequence numbers.

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A suggestion in ***FOGHORN*** to go through the file and record sequence numbers, then, is a waste of time. I use "Last Name" as my first field, and I find that is the only field I can search on (be sure to use caps and lower case correctly).

When I want to MODify, DELete or DISplay records and I have the same last name for two or more, (e.g., Smith), I can only bring up the first Smith (I can't search on two fields). Before I can find the next Smith, I must change Smith to Smyth or something unique, then bring up the next Smith. Later I have to remember what words I substituted (proper spelling), and MODify those words back to Smith, one file at a time.

When I finish MODifying, ADDing and DELeting, my records are all scrambled in the file so I cannot IMMEDIATELY do a LISt to a REPORT and find the records in usable order. If I LISt to a CLONE, later I have to SORt anyway since cloning scrambles the file again.

Type **7** or **SOR**. For this command I can press ⏎ without getting a `return to GO`, but it is not required. At the question, I only need to specify one field, unless two or more are required to get the full, correct SORt sequence of records. Why I must specify the field length, only the author of PCFILE knows.

Now I am ready to LISt to a REPORT.

Type **6** or **LIS**. I specify each field in the order I want them (the SORted field can be anywhere in the LISt, not just the first position), and the columns required will be totaled as each field is specified.

I am asked if I want to save this report. NEVER SAY, **YES!** If I do, I can only make one list to printer, screen or disk.

I do three SORts, each followed by LISt; alphabetical, by OPEK number, then by Expiration Date (SORt each time). When I save the report, and then try to SORt and LISt another way, I get kicked out of PCFILE with the message, `File already open at line 1460`.

PCFILE has its own (inconsistent) idea of the number of lines on a page, and it doesn't wait for me to change paper, so first I print to disk. That allows me to use WordStar to clean up minor errors, etc. (In Kansas, we say "and etc.").

It is possible to "clone", then list to printer or disk, but I don't like the column spacing, etc. Of course, when I clone a new version of the file, I MUST list to disk.

Occasionally, when I start to LISt, I realize that I specified fields in a sequence I don't want. The author has warned me not to press **ESC** very often in order to get out of this situation (he says I will be using up memory).

So I continue with LISt, but I answer the questions thus: list to screen, (**S**); choose selected records, (**S**); limit the first field using the "less than" (<) symbol, and compare to **A** or **B**. I type a CAPITAL because I have sorted in ascending, (**A**), order. Then, PCFILE, in its wisdom, will either decide to list out the few records or maybe just dump me back to the MENU.

I sent my $35 donation to Jim Button (author) with several questions. I received my check back and a form letter indicating that he had not done any work in the CP/M version for some time.

He plans to issue an update in late 1986. The update will go to registered owners who have made a $35 "donation", provided they contribute an additional $25.

I really think PCFILE is a good data base, especially since dBASE II is extremely difficult after I get past the basic record-keeping steps. I do hope Jim will bring it nearer to dBASE in speed and flexibility.

As an aside, I originally spent $350 on DataStar (from MicroPro). I spent many weeks driving 40 miles round trip to Computerland, before I could get someone to seriously look at my DataStar and see that there was a bug.

The replacement copy still is very squirrelly and the book makes the Osborne manual look like a best-seller. Letters to MicroPro were ignored.

When I got dBASE II with my second Ozzie, I rekeyed all my records on dBASE. With all its problems, PCFILE is a far better program than DataStar for my money.

Jim Simpkins is the treasurer of OPEK (Osborne Portable Enthusiasts of Kansas). For more information on this group and its meetings contact Norm Conley at (316) 832-0447 in Wichita, KS.

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Some Word Processing Questions

by Lindley Comer

I have been using my Osborne and WordStar for about three years now to write farm appraisal reports for my business. I don't know how I ever got along without it. I have been trying to help a friend with an IBM-XT look-alike set up a word processing system with both WordStar and WordStar 2000. Although I don't have the memory or disk storage that he does, my simple system is easier to learn and use, and my Brother HR1 makes a copy that is much better than his new Citizen Premier.

I do have a few questions I hope someone can answer for me.

1.) Is there any way to boot up WordStar with customized tab settings? I have changed the initial margin settings but I have to create a dummy file (named J), delete the default and set my new tabs, and then delete the dummy file — all with one function key. I could use the function key space for several other things if this could be done. This solution also loads the **^R** function normally used to name the print file using the <**ESC**> key with the name of the dummy file, unless I choose to print out a second copy. Presently function key **#9** is set as follows:

DJ↵^O^NA ↵^O^I15↵^O^I20 ^O^I65 ↵^K^Q↵D

2.) Is there any possible way to have two headers and/or two footers in WordStar? This would also be a big asset to me. From all I have read it appears that NewWord will do this, but I don't think I want to give up the **^KS^QP** command I use to save my file and return me to where I was editing. *[See **FOGHORN** Vol. 4 No. 3, page 46. Jack]*

3.) I also have trouble preserving my line spacing in a long report when I use a subscript for a complete line. If I only use this function for a portion of the line, my pagination remains unchanged.

4.) I managed to get a copy of the public domain spelling checker that I use on nearly every file, but I am not sure that I am using it correctly. I have it set up to flag the "unrecognized" words with a \, and the SF Key #7 is set to find and delete the flag. I then correct the word or move on to the next flag with the the **^L** key. I have to manually add words to the SPELL.DIC file, and then I sort them alphabetically with either SuperCalc 2 or dBASE II. Otherwise it is difficult to look through the entire dictionary file to see if the particular work is already entered. By paring my WordStar disk down to only the essentials I am able to keep the spelling checker on the WordStar disk. Is there a better way?

5.) My last question has to do with switching files between my Osborne and an MS- or PC-DOS machine. Are there any reviews on the software I see advertised to do this in back issues of the ***FOGHORN*** or anywhere else that might be available? *[Some **FOGHORN** issues: October 1984, January 1985, May 1985.]* I would like to be able to exchange dBASE II .CMD and WordStar files with the friend who has the IBM. *[Media Master or UNIFORM both will allow you to transfer files, as will PCPIP2 on FOG/UTL.043. Jack]*

Note: I tried Paul "Unknown's" solution to continuous underlining. It still does not work as well as overprinting the previous line with the underline after a **^P↵** command. I have this set up with SF Key #0: **^Q^D^P↵**. I can place the cursor anywhere in the line, hit **^O**, and then proceed to put the underline precisely where it needs to be.

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WordStar for Recordkeeping

by Jerry Lundquist

Any text editor with a FIND routine can readily be used for information handling, thus avoiding the complexities of a data base management system. A text editor won't offer you sophisticated recordkeeping, but it will work nicely for such simple chores as retrieving information on articles and bibliographies.

The scheme works best if your editor is "case sensitive", i.e., if it recognizes the difference between upper case and lower case letters. You use this ability with keywords describing your data and enter these either in a group or in text, but always in upper case. In this way you can search for only the keywords describing your data without retrieving nulls.

I use WordStar for a file about creative writing books and articles. Two typical entries look like this:

> "Writing about Characters," Rust Hills' Writing in General and the Short Story in Particular,, Houghton-Mifflin (1977).
> SHORT-STORY, NOVEL, AUTOBIO, SLICK-FICTION, QUALITY-FICTION, CHARACTER-SHIFT, CHARACTER-TYPES, STOCK-CHARACTERS, MOTIVATION.
> Summary: Three pages, CLASS SUMMER, 84; Menlo Park Library.
> Hills writes from the viewpoint of "quality fiction," and tends to be rather intellectual in his approach to writing. He is generally considered to be something of an authority on short stories, but

this assembly of pieces from his book also deals with the novel and autobiography. He says that writers of formula fiction (i.e., slick fiction) fail in many ways because the stories lack flexibility. He points out the dangers of character shift, the hazards of describing character types, and the weakness of stock characters in fiction. It doesn't fall in the category of news, but motivation must drive plot rather than the contrary.

"Creating Believable Characters," Dean R. Koontz' How to Write Best-Selling Fiction, Writer's Digest, $13.95 (1981).
HUMANIZING, STOCK-CHARACTERS, MOTIVATION, PLAUSIBILITY, CONSISTENCY, COMMON-MOTIVES, TRAITS, TITLES, NARRATIVE-HOOKS.
Summary: Three pages, CLASS,SUMMER, 84; Menlo Park Library.
Koontz is a great contrast to Hills in his approach to writing. He practices fiction as a trade and may hope to create great fiction, but mostly is interested in making money from his writing. For this reason his book is aimed at helping the person who wants to practice the craft of writing fiction by offering hints on how to humanize characters, the use of stock characters as frameworks on which to hang specific characteristics, the importance of motivation, consistency, and plausibility. He lists the most common motives that drive people, and explains how traits can be used in writing about people, as well as how titles can be used in developing a story line. He warns about the necessity of narrative hooks.

These entries tell me that Hills, the fiction editor of Esquire, and Koontz, a successful free-lance writer, discuss many aspects of character development that interest me in books available from the Menlo Park Library, and that I have prepared a summary of each that will be found on my disk labelled "Class, Summer, 84".

The keywords are typed in CAPs so you can limit your search to keywords. And the keyword phrases are hyphenated to lock them for a word list analysis, of which I'll speak later.

Using the above pattern, I can search at three levels:

- Keywords (SHORT-STORY),
- Initial CAP (Short Story), or
- Lower case (short story).

With the above entries, a search for SHORT-STORY would return the Hills entry and ignore the Koontz entry; a search for MOTIVATION would return both. A search for "Hills" in this file would return five entries, one at a time, because I have five summaries, each dealing with a different aspect of fiction writing, on Hills' book in my file.

Another approach is to describe or summarize each article and use the words in those descriptions for your search points by inputting them in CAPs, along the lines of the "keyword in context" pattern.

This gives you the same possibilities of search, but has a drawback: an author may not use the same words as you would to describe the same concepts, thus making retrieval difficult by not offering keywords from your vocabulary. This approach is illustrated below:

"Writing about Characters," Rust Hills' Writing in General and the Short Story in Particular,, Houghton-Mifflin (1977).
Summary: Three pages, CLASS SUMMER, 84; Menlo Park Library.
Hills writes from the viewpoint of "QUALITY-FICTION" and tends to be rather intellectual in his approach to writing. He is generally considered to be something of an authority on the SHORT-STORY, but this assembly of pieces from his book also deals with the NOVEL and AUTOBIOGRAPHY. He says that writers of formula fiction (i.e., SLICK-FICTION) fail in many ways because the stories lack flexibility. He points out the dangers of CHARACTER-SHIFT, the hazards of describing CHARACTER-TYPES and the weakness of STOCK-CHARACTERS in fiction. It doesn't fall in the category of news, but MOTIVATION must drive plot rather than the contrary.

If your text editor isn't case sensitive, a search would be slower because the search routine cannot tell the difference between NOVEL, Novel, and novel.

You can sequence entries into the file in three ways, depending on how you want to use it. You could always enter information at the beginning of the file; this would be reverse chronological order — first in, last out or FILO. This will present the most recent entries first in a search.

You can always add entries at the end of the file, chronological order — last-in, last-out, LILO. Any search of a file like this would turn up the most recent information last. Both of these assume that you only use the file with a computer search procedure.

You also could enter material in alphabetical order, by author, for example. A file organized in this fashion would work nicely if you prefer a visual scan and anticipate a small file. I prefer FILO because I am most apt to refer to recent articles and my file is large.

You probably will find a list of keywords valuable in minimizing the number of keywords used in your file. I search my keyword list before assigning keywords to an entry, thus making certain that a specific concept always is described by the same word or locked phrase. (A locked phrase is one wherein the words are joined by a hyphen.)

I use a nifty little routine called WORDFREQ, written by Norman Worthington III, to get an alphabetized list of my key words. (This routine is available from Spite Software, PO Box 8918, Dept. PC 3, Portland, OR 97207, (503) 224-0137, as part of a package called "Writer's Aide".)

I use this list in two ways: one, when initiating a search, I look at the list to make certain I am using language found in the file; and, two, it gives me a check on words that are so nearly synonymous as to be confusing.

You'll find that your list of keywords grows remarkably fast at first, but then declines in growth, and eventually almost ceases to grow. You can control this growth by care in selecting keywords, and being cautious about assigning too many keywords to any entry.

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WordStar Tips

by Karen S. Ciocchi

There were two people asking for help in the ***FOGHORN*** recently, for whom I think I have some answers.

Searching for WordStar Underscore Commands

Re. Ms. Paulshock's dilemma about not being able to use WordStar's search command to verify that underscore commands are paired properly (12/85 ***FOGHORN***, p. 16), she might consider the following three options.

1. Program a function key that would make certain the two underscore commands are entered properly in the first place. This way, there'd be no need to Search to double-check because she'd virtually be assured of always entering the second **^PS**. For instance:

^PS^PS^D

would put in both Start Underscore and Stop Underscore commands and then move the cursor back between the two so she could insert the word/words needing underlining. She wouldn't even have to break typing stride, since one control code keystroke would replace the four she's currently doing! When she reaches the end of what she wants underscored, simply type **^F** (to jump the cursor over the last **^PS**) and continue typing. Unfortunately, this idea works only if she's typing with INSERT ON; if it's OFF, then the first letter typed after hitting the function key would overstrike and erase the second underscore command.

2. She's on the right track when she thought to put a "/" after the second **^PS** to give her something easy to search for. But this method has two drawbacks: First, if she's having trouble remembering to put in the second **^PS**, is having to remember to put in a slash any better? Second, each slash must be deleted before reforming and/or printing. An alternative is to pick something that is BOTH easy to search for AND invisible whenever reformatting or printing. I suggest programming a function key saying:

^PS^PO^PH

for use as both Start and Stop Underscore commands (don't worry if this appears on the screen only as **^S^O^H**). This sequence has three advantages:

* The **^PH** character is easy to search for;
* Since **^PO** and **^PH** cancel each other out (because the first is a space and the second is a backspace), she doesn't have to delete anything before printing, and any paragraph containing **^PO^PH** still reforms properly with a **^B** and even rightjustifies correctly, and;
* It's faster to invoke a function key (one keystroke) than typing **^PS** (two keystrokes) or **^PS/** (three keystrokes)!

Putting in Underscore commands this way means now she can search for them. However, because **^O** is a Special Search Character when answering a FIND? prompt (meaning it can't be searched for directly), searching for the backspace is the most expedient way to search for the above string:

WS Prompt	Your Response
	^QF
FIND?	^P^H<ESC>

(Again, don't worry if **^P^H** appears on screen only as **^H**.) After the first one is found, simply use the Continue Last Search command (**^L**) to find the next occurrence.

3. In case she missed it, read Bill Rothstein's wonderfully ingenious solution to this problem in the 2/86 ***FOGHORN*** (p. 13) which, come to think of it, is probably more elegant than any of mine. In a nutshell, he simply redefined a function that he never needed and COULD search for (the Overstrike command, **^PX**) into a function that he DID need and couldn't search for (underscoring) simply by patching his WordStar. Now there's someone who understands efficient allocation of resources!

Of course, searching for underscore commands is the tough part. Once you've found them, replacing them is easy by comparison.

Globally Replacing WordStar Underscores

Would it be handy to find all underscore commands and replace them with something else? When would anyone want to do such a thing?

A fellow Tempe Osborne Group member had to exchange all the underscore characters in a WordStar file with ***S*** so his Osborne's WordStar files (at home) could be transferred to his office's Wang word processor. (Once transferred, the Wang operator could then globally replace all ***S*** with Wang's command for underscore.) But he needed the proper WordStar underscore commands in the document while he was developing drafts on his Osborne and printing them on his Okidata. He wanted to replace them only just before "uploading" the document to the Wang. He had discovered that replacing Bold commands was straightforward:

WS Prompt	Response
	^QA
FIND?	^P^B↵
REPLACE WITH?	*B*↵
OPTIONS?	GN↵

But he quickly found out (as many of us discovered the hard way) that finding Underscore commands is not a matter of simply typing **^P^S** at the FIND? prompt. This is because **^S** is a Special Character when used to answer a FIND? prompt with either the **^QF** or **^QA** commands.

Assuming that one enters underscore commands throughout a document as done in the Second Option above, anyone can successfully do a global Search and Replace this way:

WS Prompt	Your Response
	^QA
FIND?	^A^P^H^A ↵ (Remember this will probably show on your screen as **^A^H^A**)
REPLACE WITH?	*S* ↵
OPTIONS?	GN ↵

Very briefly, the functions of the four Special Search Characters are:

Character	**Special meaning when answering a FIND? prompt**
^A	match any SINGLE character (i.e., wild card match)
^N	match the carriage return/line feed sequence
^Ox	match any character OTHER THAN x
^S	match any character NOT a letter or digit

The functions of the four Special Search Characters are more fully documented in the WordStar Reference Guide under "Find Functions".

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Keeping Track of Programs and Texts

by T. J. Olney

One of the recurring problems for programmers and writers is that of keeping track of versions of programs and texts as they are updated and revised.

Many of us make regular hard copies of our programs or text so that we can see the whole thing at once. Hard copies also help get others' opinions and advice.

The problem becomes one of keeping track of which version of the program is included in the hard copy. There are some nice programs around for putting a title on each page and numbering the pages, but if you are using WordStar, these become unnecessary.

A simple solution is available using Mailmerge to print your file instead of the P option. First create the following file:

```
..FILE TO MAILMERGE THE PRINTING OF FILES WITH HEADERS
.MT4
.MB3
.PL66
.HM3
.OP
.AV DATE
.AV ''Name of file to PRINT with headers and date?'', FILE
.HE LISTING OF FILE:  &FILE&   ON   &DATE&        PAGE #
.FI &FILE&
```

This file (which I call LISTING) can be merge printed using the M option from WordStar's main menu.

When asked for the file to print, simply enter the name of the file, which can be either a program or text. What you will get is a listing with the date and filename and page number at the top of each page.

You can of course add any other information that you like into the header either as part of the **.HE** line or as an additional &notes& variable.

Ideally, the header line should fit on one line of the printer as you are using it. The only problems that might arise will be created by dot commands in the file being listed.

• • • • • • •

Tongue in Cheek "Languages"

Some other languages we are <u>sure</u> you didn't know existed!

GIRTH (by Harry M. Hawkins)

(Giant Interactive and Redundant Technical Helper.) A language devoted to weight reduction for rotund programmers. Features very complex commands that keep the programmer at the keyboard for long periods of time thus preventing caloric intake and subsequent reduction in girth (also hence the name).

• • • • • • •

Solving/Avoiding Problems with the WordStar R(UN a Program) Option

by Duncan White

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It is often noted that attempting to RUN programs which use the CCP from within WordStar (using the R option) will cause keyboard lock up. Perhaps there is some precise use of terminology which I don't understand here, but in fact it is quite possible to run programs which use the CCP, as long as they HAVE to do so only on initial start-up.

Using CP/M Utilities from Within WordStar

Programs which use the CCP (but DO NOT have to accept input while running) will RUN quite happily with parameters issued at the WordStar **R** command prompt, e.g.:

PIP A:=B:*.BAS
PIP b:NONDOC=b:DOCFILE(z)
((z) option makes a non-document file)
RENAME B:NEWNAME=B:OLDNAME
ERASE B:*.BAS
SORT C:MIXEDBAG B:ORGBAG

These programs will merrily CRASH, however, if you issue the same commands from within the program. For the same reason, don't attempt to stop and start screen scrolling (e.g. directory or listing programs) using **^S** or **^Q** from within such programs.

You will also be in trouble if the program can't handle your initial command completely and ASKS for additional input. If it merely makes a rude remark and aborts, you're OK.

Note that only .COM programs may be run from WordStar. Built in CP/M commands such as **REN** and **ERA** will not work because they are NOT .COM file programs.

My comments are based on experience with an Osborne Executive version of WordStar 3.0, but don't be afraid to experiment with your version provided you have the time and patience to reboot if the program crashes.

Squeezing Additional Printer Options Into WordStar

It is possible to squeeze additional printer control code options into WordStar. C. Bailey's interesting approach in the December 1985 ***FOGHORN*** depended on defining **^PQ** to send an ESCAPE to the printer so it would accept following text as valid commands to the printer.

I presume one would have to live with **^OD** not being able to hide the offending printer codes which would also affect right margin justification, at least on the screen. There is another approach which is not ultimately as flexible but does preserve on-screen formatting.

Many of the printer control commands for the Epson FX series require only two bytes of code, although WordStar permits up to four bytes to be assigned. I have made use of this wasted facility by stacking the codes. The printer ignores control codes telling it to do something it is already doing, so one can use this feature to advantage.

I have assigned my codes (using INSTALL) as follows:

^PA	ITALICS	selected			
^PN	ROMAN	selected			
^PE	ELITE	selected	+	COMPRESSED	off
^PQ	COMPRESSED	on	+	EXPANDED	off
^PR	PICA	selected	+	SUB/SUPERSCRIPT	off
^PW	EXPANDED	on			
^PT	SUPERSCRIPT	toggle			
^PV	SUBSCRIPT	toggle			
^PY	TRUE UNDERLINE	toggle			

Thus the following combinations (assuming one starts in normal Pica mode) will yield:

^PE	Elite
^PE^PW	Expanded Elite
^PW	Expanded Pica
^PQ	Compressed Pica
^PQ^PW	Compressed Expanded Pica
^PT	Superscript
^PE^PT	Elite Superscript
^PE^PW^PT	Expanded Elite Superscript
^PW^PT	Expanded Superscript
^PQ^PW^PT	Compressed Expanded Super
^PQ^PT	Compressed Superscript
^PV	Subscript
^PE^PV	Elite Subscript
^PE^PW^PV	Expanded Elite Subscript
^PW^PV	Expanded Subscript
^PQ^PW^PV	Compressed Expanded Sub
^PQ^PV	Compressed Subscript

--)	^PR	return to normal
--)	^PQ^PE^PR	return to normal
--)	^PQ^PE^PR	return to normal
--)	^PE^PR	return to normal
--)	^PQ^PE^PR	return to normal
--)	^PT^PR	return to normal
--)	^PT^PR	return to normal
--)	^PT^PQ^PE^PR	return to normal
--)	^PT^PQ^PE^PR	return to normal
--)	^PT^PQ^PE^PR	return to normal
--)	^PT^PQ^PE^PR	return to normal
--)	^PV^PR	return to normal
--)	^PV^PR	return to normal
--)	^PV^PQ^PE^PR	return to normal
--)	^PV^PQ^PE^PR	return to normal
--)	^PV^PQ^PE^PR	return to normal
--)	^PV^PQ^PE^PR	return to normal

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The ability to allow single WordStar print codes to provide more than one function will naturally depend on your printer's code for each function. The trick in making the assignments is to make sure you can get all the options you wish by proper combination. I'm sure there are other useful combinations to suit your needs.

Printing Specific MailMerge Data

Given a list of data entries for a MailMerge file it is possible to select and/or skip specific entries without using CONDITIONAL commands.

If your document is one page long and you wish to print using only the first six names on your data file, tell MailMerge to print pages 1 to 6. If you wish to use only the 10th listing, select only page 10 etc.

If your actual document is more than one page in length multiply the page number by the number of pages in the document, i.e., for a two-page document using the first six names, specify pages 1-12. For only the 10th listing, select pages 19, 20 etc.

TURBO Pascal from the WordStar "R OPTION"

There are many complaints of problems encountered in attempting to run TURBO Pascal generated .COM files from within WordStar, using the "R Option" from the OPENING MENU. *[This is a CP/M problem, not a fault of WordStar.]* The CCP is often blamed. My experience leads me to believe this is not the root of the problem for programs written in TURBO Pascal v2.0.

Apparently, TURBO programs compiled to .COM files cannot sense the amount of memory available to them and may fatally overwrite vital sections of WordStar if left to their own devices.

The solution is quite simple and involves decreasing the amount of memory used by the TURBO program.

TURBO Pascal programs do not compile sequentially from low memory to high memory but compile into two separate regions of memory. Compiled program CODE starts low in memory and grows UP towards high memory. Program DATA starts high and grows DOWN towards low memory. The space between the two sections is unused.

Naturally, if the two sections are large enough to collide, the program is too large for available memory and will not run under any operating environment.

The Solution

When selecting the Compile OPTIONS to create a .COM file, notice that you may also select the high memory (END) address. If you do not specify the END address, TURBO will set it to the largest value it feels happy with.

Unfortunately, WordStar may not be happy or amused. So... make it happy by DECREASING the END address. The compiled program will thus be less likely to interfere with WS.

Different systems and versions of WordStar will have different amounts of memory available, so there is no single correct setting. A very safe END address would probably be A100, but realize that this may cause the two CODE and DATA parts of a large program to collide.

If A100 is not large enough for the TURBO program, increase the END address. I have not yet run out of memory compiling 20K .COM files to this address so it seems to be a reasonable one for my purposes. In fact, experiments suggest that the Osborne Executive can handle at least up to END address E000 without interfering with WordStar 3.0.

This memory-use problem is not peculiar to WordStar. It will also apply to any TURBO program COMPILED on a computer system having a large amount of memory, but RUN on a system having a smaller amount of AVAILABLE memory. Keep that END address low for best portability!

• • • • • • •

Margin of Victory

by Jim Holmes

A new user asked me recently how to format a thesis, with top and bottom margins of one inch (except Page 1 which required a 2-1/2" top margin); left margin, 1-1/2"; right margin, one inch.

I told her to set the top margin to one inch, using **.MT 6**, and to modify it on Page 1 by simply entering nine carriage returns <**CR**>'s (which include line feeds) to gain the additional 1-1/2". The one inch bottom margin was easy: **.MB 6**. For the 1-1/2" left margin we used the Page-Offset command: **.PO 15**.

Then I had her enter a ruler line, starting at the left margin with two dots (so it wouldn't print out) and ending at Column 60:

```
..L-----------------------R
```

Now, each time she loads her Thesis file, she can move the cursor to that line and enter a **^OF** to establish the right-hand margin.

*[Reproduced from **Open Sesame**, January 1986.]*

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ZORBA

Using the Zorba Screen

by Paul O'Nolan

The Zorba screen is memory mapped. That means that what appears on the screen is actually stored in some of the Zorba's 64K memory. The screen consists of 25 lines of 80 characters each. By allowing one byte per character position on the screen, that's 2000 bytes or just under 2K of random access memory, or RAM.

This block of memory known as screen RAM is located at F700H, 63232 in base 10. You can display something on the screen using CBASIC in either of two ways: using the PRINT statement, or by using the POKE command to alter screen RAM.

Type the following program into your Zorba, using WordStar in the non-document mode. Call it VIDEO.BAS:

```
REM  Video demo
     ESCAPE$ = CHR$ (27)
     CLEAR$  = ESCAPE$ + ''E''
     PRINT CLEAR$
     PRINT ''Enter one of the following numbers:''
     PRINT
     PRINT '' 32 for underline, 16 for reverse video''
     PRINT ''  4 for alternate character set, 2 for blink''
     PRINT '' and 1 for half intensity''
     PRINT
     INPUT ''Number chosen => '': ATTRIBUTE%
     PRINT
     GOSUB 100
     START% = CURSOR%
     PRINT '' The Oracle of Zeus'';
     GOSUB 100
     POKE CURSOR%, 128
     POKE START%,  128 + ATTRIBUTE%
     STOP
REM  Subroutine to get cursor position
100  CURSOR% = PEEK (62979) * 256 + PEEK (62978)
     RETURN

     END
```

Next, get your CBASIC disk, compile the program and run it:

```
A> CBAS2 VIDEO ↩
A> CRUN2 VIDEO ↩
```

Now enter a number. Experiment with the numbers given above, and combinations of them. You'll find that 17 gives you half intensity reverse video. The numbers given above correspond to bit positions in a byte. If the high bit is set, the Zorba sets the video attributes according to the contents of the byte, otherwise it displays a character. It cannot display both at the same location, which is why the title displayed above has a space in front of it, and why WordStar cannot use reverse video to highlight blocks of text on the Zorba.

To recapitulate: a byte has 8 bits, seven of which are used to store the bits of an ASCII character, the "high bit", (on the left), is free. WordStar uses the high bit to mark characters in certain ways:

A soft carriage return (entered by WordStar when it wraps a line) is a hard carriage return (one entered by you — a paragraph delimiter) with the high bit set. Here's how they look:

	Decimal	Hexadecimal	Binary
Hard ↩	13	0D	00001101
Soft ↩	141	8D	10001101

ASCII character 13 may also be entered from the keyboard by typing **^M** (control M). WordStar also uses the high bit to distinguish between hard and soft spaces: the last letter before any soft spaces has the high bit set and the soft spaces are stored as nulls (decimal 0, hexadecimal 00, and binary 00000000).

Now, the Zorba has 2000 bytes of screen RAM, that is memory where what appears on the screen is stored. Unfortunately, the Zorba doesn't only store characters here, it also stores video toggles.

A video toggle is a byte with the high bit set, and its bit positions correspond to video attributes which are either on or off depending on the value of the bit. For instance, if the right most bit is a 1 then the screen is set to half intensity from that point on, if it's a 0 then the screen will be normal intensity from that point on.

So the Zorba BIOS uses the high bit to distinguish between characters and video toggles, and this conflicts with WordStar's use of the same bit. What's to be done to keep the toggles out of WordStar's way, or vice versa?

Some computers use an additional 2000 bytes of auxiliary RAM to store the video toggles, others employ a very much more complicated and slower running BIOS to keep track of toggles. The position in RAM of a character on the screen in the Zorba is easily calculated:

```
$F700 + 80 * (line - 1) + column
```

Hex F700, (decimal 63232), is the base of the screen RAM. Thus line 1 column 1 is found in memory location 63232, line 1 column 2 in 63233 and so on. If a toggle in a line were to displace all subsequent characters, calculating where a line and column position was in memory would be somewhat tricky, and as I said, it would slow the machine down quite a bit — which is why this was not implemented on the Zorba (allegedly).

I would like to be able to compare the performance of both approaches, but cannot, since I don't have a second BIOS — to the best of my knowledge the second approach was never tried.

The Zorba BIOS actually ZAPS the high bit of all characters to be displayed on the screen. So, it is not possible to turn on underlining, e.g., by PRINTing the appropriate video toggle on the screen using BASIC.

The only way to accomplish this under program control is to directly store the required value to the appropriate memory location. Using CBASIC you can set the screen to reverse video with the following program:

```
POKE 63232, 144
END
```

A convenient way of working with memory locations and line and column coordinates is to have a calculator programmed to give the memory location of given coordinates (and vice versa). This will enable you to calculate the values for POKE instructions to include in the program.

A slower, possibly more readable, and functionally equivalent method is to have a subroutine in the program which will perform the same operation.

Digression on Subroutines

A subroutine is a way of making a program shorter and easier to write. Instead of repeating a set of instructions every time they are required in a program, a subroutine containing those instructions can be "called". The larger the subroutine, the more code is saved in the main program.

Let's take a simple example: you've written a "zap the greenies" game for the Zorba and you allow the user to decide whether he or she wants sound effects. A "flag" is needed to indicate if sound is on or off, and it will have values true (1 for on) or false (0 for off). Instead of having:

```
IF SOUND.IS.ON% THEN PRINT BELL$
```

repeated throughout the program — at every point a greenie could meet his maker — you could have instead:

```
GOSUB 125
```

Then at line 125 you'd have:

```
125  REM Sound effects
     IF SOUND.IS.ON% THEN PRINT BELL$
RETURN
```

This is a trivial subroutine. Nevertheless it is clearly easier to type `GOSUB 125`, even if that is not very readable; i.e. descriptive of what the subroutine does (but that's a problem with BASIC). `BELL$`, above, is a variable with the value of ASCII 7, ("BEL"), and which makes the terminal beep when you print it.

Cursor Positioning and Other Subroutines

The following subroutine will position the cursor at the coordinates `LINE%` and `COL%`. (The % sign tells CBASIC that LINE and COL are integer variables, i.e., whole numbers with no decimal part, and we know that they should have values in the ranges of 1-25 and 1-80 respectively.):

```
100  REM Subroutine to position cursor at LINE% and COL%
     L$ = CHR$ (LINE% + 31)
     C$ = CHR$ (COL%  + 31)
     PRINT ESCAPE$ + ''Y'' + L$ + C$;
RETURN
```

The "bias" of 31 that is added to each coordinate is a requirement of the terminal, as is the order of the ESCAPE, Y, line and column values. The bias value of 31 makes the resultant value a printable character (the first 31 ASCII characters cannot be printed — the seventh is BEL which we met already). It's easier to debug a routine or program with variables whose values are printable! The semicolon tells CBASIC not to print a carriage return after positioning the cursor (which would defeat our purpose!). The variable ESCAPE$ needs to be defined early in the program as follows:

```
ESCAPE$ = CHR$ (27)
```

All you have to do to use the subroutine then is:

```
LINE% = 10 : COL% = 1 : GOSUB 100
```

Here we have set LINE and COL to the coordinates we require and called the subroutine (GO SUBroutine at line 100). The colons act as statement separators, and should be used carefully — it is evident that each of the three statements is part of the "put the cursor at line 10, column 1" job, and so they belong together, however they should not be used to save paper as the readability of a program written thus will suffer.

Our subroutine could be adapted to displaying a message by adding a line:

```
PRINT MESSAGE$;
```

before the `RETURN` statement. Then you would just have to store the right values to `LINE%`, `COL%` and `MESSAGE$` before calling the subroutine.

What about a subroutine to display an error message at the bottom of the screen? Suppose you are getting a single character from the console and you want it to be a **Y** or an **N** in response to a question. If any other character is entered you want the program to give an error message:

```
IF RESPONSE$ <> ''Y'' AND RESPONSE$ <> ''N'' THEN GOSUB 250
```

(Note that we did not do a thorough job here, since we didn't check for lower case input.)

```
250  REM Let's wake this guy up
     L$ = CHR$ (55) : C$ = CHR$ (32)
     PRINT ESCAPE$ + ''Y'' + L$ + C$;
     PRINT ''OK buddy, let's have a Y or an N or I go to lunch'';
     PRINT BELL$;
RETURN
```

This subroutine will set the cursor at line 24 and column 1, display an abusive error message (which is to be deplored — of course!!) and then beep to wake the user up. Like ESCAPE$, BELL$ should be defined as:

```
BELL$ = CHR$ (7)
```

earlier in the program. This routine could easily have a:

```
PRINT MESSAGE$
```

line, and you could use it as a general purpose routine to display something on the 24th line. Notice that I didn't add 31 to the LINE% and COL% values, or did I? I did use the bias of 31 that the terminal requires, but I didn't make the subroutine add it to 24 and 1. It would be pointless to do this because the coordinates will always be the same, i.e., the bottom line stays put.

When the user enters a **Y** or an **N** you could remove any error messages from the bottom line, so as to assuage wounded dignity and keep things looking tidy:

```
260  REM Clear error message line (#24). cursor sbr at 100
     LINESAVE% = LINE% : COLSAVE% = COL%
     LINE% = 22 : COL% = 1% GOSUB 100
     PRINT ERALINE$;
     LINE% = LINESAVE% : COL% = COLSAVE%
RETURN
```

This subroutine calls our earlier cursor positioning routine which has a label (line number) of 100, and it prints `ERALINE$` on the start of the 24th line. `ERALINE$` is defined (as usual, with all "constants", at the start of the program) as:

```
ERALINE$ = ESCAPE$ + ''I''
```

ESCAPE I is the code for the Zorba monitor to clear the line the cursor is on (the Heath/Zenith H89 terminal ESCAPE codes supported by the Zorba are listed at the end of this article). We don't have to worry about the values of LINE% and COL%, they are saved to, and restored from, LINESAVE% and COLSAVE%, so they are not corrupted (changed unexpectedly) by this or any subsequently called subroutine. A more efficient subroutine would be:

```
260  REM Clear 24th line
     L$ = CHR$ (55) : C$ = CHR$ (32)
     PRINT ESCAPE$ + ''Y'' + L$ + C$;
     PRINT ERALINE$;
RETURN
```

This subroutine is self-contained, it calls no other routine. It does not need to save LINE% and COL%. Our previous routine could be made into a "clear line" routine by not saving LINE%.

In writing subroutines you have to consider how often they will be called, and how complex they are, in order to determine whether to merge what could be several routines into one "general purpose" routine.

Note: I have been saying routine and subroutine interchangeably, though technically there is a difference. A routine is an "in-line" piece of code which typically includes a control structure such as a loop, whereas a subroutine is a digression of sorts — the program jumps to a different part of the program executes some instructions and then returns to the next instruction in line.

The short program described in the early part of this article (to have a look at some of the different video attributes of the Zorba), included the following subroutine:

```
REM  Subroutine to get cursor position
101  CURSOR% = PEEK (62979) * 256 + PEEK (62978)
     RETURN
```

This routine gets the decimal value of the screen RAM location at which the cursor is situated and returns it in the variable CURSOR%, so if the cursor is on line 1, column 1, CURSOR% will have a value 63232. A single byte can hold representations of positive numbers from 0 through 255, so two are needed to address (reference) the Zorba's 64K memory (i.e., 65,536 memory locations — 1K = 1024).

Two bytes, or a total of 16 bits can be used to represent any of those 65,536 bytes, which are conventionally numbered 0 through 65,535. Those memory locations make up what is called the "address space" of the machine.

Decimal Memory Location #	Binary Address [1st byte][2nd byte]
0	[00000000][00000000]
1	[00000000][00000001]
2	[00000000][00000010]
:	
255	[00000000][11111111]
256	[00000001][00000000]
257	[00000001][00000001]
:	
:	
65535	[11111111][11111111]

Above is a representation of the correspondence between memory locations and addresses. Although each location is only 8 bits long, it takes a full 16 bits to specify its address. The Zorba, and other "8 bit" computers, cannot access a 65,567th byte, because they cannot address it — all possible permutations of 16 ones and zeros have already been used to represent addresses.

Note that the address space doubles if you add a bit to the length of the address (there are two 1 bit addresses: 0 and 1, four two bit addresses 00, 01, 10, and 11, eight three bit addresses — and so on).

Look at the binary values of the addresses 255 and 256. By adding one we managed to get a rather different pattern of ones and zeros. In binary arithmetic a 1 is like a 9 in decimal — if you add a one you "put down the zero and carry one".

Imagine the line of 1's in the second byte of address 255 as a line of 9's and the arithmetic might seem a little easier to follow. As in decimal, the base itself is never written except as a combination of lower denomination symbols: there is no symbol for "ten" in decimal arithmetic, we write it as a "1" followed by a "0". Similarly, in binary there is no symbol for two, we write it as "10". Likewise, 16 in hexadecimal (base 16) is written "10".

Our 65,536 byte address space can be regarded as a set of 256 "pages" each containing 256 bytes (256 * 256 = 65536). Now, since each byte can represent 256 values we can regard our two byte address as a page address byte followed by a byte giving a within page offset.

Look at the binary address of memory location 257 above; it's page 1, byte 1 — get it? Thus, all two byte addresses consist of a "page byte" and an "offset byte" (from the start of the page). To compute the decimal value of an address here's what you'd do: multiply the page number by 256 and add the within page offset.

Look at that subroutine again! PEEK is a BASIC command to get at the contents of a memory location. Byte number 62979 contains the page number in which the cursor is found, and byte 62978 contains the offset within the page. These two bytes can be used to find out "where's the cursor?!", because anytime the cursor is moved the values they contain will change to indicate its new position.

There's one thing you should know if you are going to use CBASIC to do "direct cursor addressing", i.e., placing the cursor at given coordinates on the screen. You must have the following line at the start of the program — its actual position is immaterial, it should just precede any cursor positioning:

```
POKE 272,0 : CONSOLE
```

This sets the console width to infinity, which means that CBASIC will never output a carriage return after you position the cursor — if you don't do this, every umpteenth cursor positioning will not work properly (umpteen is whatever value the console width is set to; the default value is 80). See CBASIC Ref. manual, p. 33.

Subroutines Call Subroutines

On their backs to byte them, eh? Well written programs make liberal use of subroutines in some shape or form, as do subroutines themselves. Here's a subroutine that uses two of the subroutines we have seen. `ESCAPE + D` is the terminal code to make the cursor move left a character. `OKSOFAR` will have one of two values when the subroutine exits: a **0** if things are not OK, i.e., a **N** was entered in response to `OK SO FAR [Y/N]` or a **-1** if a **Y** was entered. The values -1 and 0 are what CBASIC uses for the "Boolean" values "true" and "false". The backslash on the right hand side of the comment lines indicate that the line is continued.

```
REM Subroutine to determine if OKSOFAR. This subroutine \
    gets a Y or N answer to 'OK SO FAR \
    [Y/N]' on the 22nd line. It calls cursor positioning \
    routine (at 100) the get cursor position routine (101). \
    'OK SO FAR [Y/N]' appears in reverse video. Note the \
    space in front of 'OK' below.
130  OKSOFAR% = 0 : YN$ = ''*''
     LINESAVE% = LINE% : COLSAVE% = COL%
     LINE% = 22 : COL% = 1 : GOSUB 100
     GOSUB 101 : START% = CURSOR%
     PRINT '' OK SO FAR [Y/N]''; : GOSUB 101 : PRINT '' '';
     POKE CURSOR%, 128 : POKE START%, 144
     WHILE YN$ <> ''Y'' AND YN$ <> ''N''
         YN$ = UCASE$ (CHR$ (CONCHAR% ))
         PRINT CHR$(27) + ''D'';
     WEND
     IF YN$ = ''Y'' THEN OKSOFAR% = -1
     LINE% = LINESAVE% : COL% = COLSAVE%
RETURN
```

A program segment which called this subroutine might look something like this:

```
     WHILE NOT OKSOFAR
         GOSUB 130
     WEND
```

The instructions within the WHILE loop will be executed until the subroutine at line 130 returns a value of true for the variable OKSOFAR%. The construct shown above could be used to validate input before proceeding with the execution of a program.

The subroutines we have seen so far, though they work, are not especially elegant. Sometimes there's a simpler way to get things done than by writing a subroutine, which brings us to the subject of:

Functions

A "function" is a subroutine or "procedure" which returns a value. Most languages have some built-in functions such as:

SQRT — square root
SIN — sine
LOG — logarithm
etc.

Other functions can be written by the programmer and then used as if they were also built-in. Functions are used with one or more "parameters" (the value of each of which is called an "argument") and the resultant value must be assigned to a variable or output in some way — a function cannot be used on its own. Thus:

```
LOG (10)
```

is an illegal and meaningless line of code. However:

```
PRINT LOG (10)
RESULT = LOG (10)
```

are both valid. The first line prints the log of 10, i.e., 1, and the next assigns the value 1 to the variable RESULT. Here the parameter was the number in parentheses, and the argument — its value (they are not the same) — was 10.

We can accomplish cursor positioning and locating very easily with suitable functions. The following will do nicely:

```
DEF FN.LC$ (LINE%, COL%) = \ Cursor positioning function
    ESCAPE$ + ''Y'' + CHR$ (LINE% + 31) + CHR$ (COL% + 31)

DEF FN.C% (CURSOR%) = \ Cursor locating function
    PEEK (62979) * 256 + PEEK (62978)
```

Function definitions, such as the above, should appear at the start of a program. Consult the CBASIC reference manual for further information. We could use those functions in a program as follows:

```
PRINT FN.LC$ (20, 1);
CURPOS% = FN.C% (CURSOR%)
```

The first line is functionally equivalent to calling our cursor positioning subroutine, except that it's faster and easier to write, and similarly the second replaces the call to our cursor locating subroutine. A third parameter, a string variable, could be added to the first function given above, and it could be used to output text to the screen:

```
PRINT FN.LC$ (22, 1, ''This will appear on the 22nd line.'');
```

Zorba Terminal Commands

The following list of "escape sequences" corrects, and is in addition to, that published in the "Preliminary" Zorba manual on p. 112. Each of the following consists of an ESCAPE character followed by the letter listed, except for the direct cursor positioning sequence.

A	Cursor up one line.
B	Cursor down one line.
C	Cursor right one column.
D	Cursor left one line.

All of the above stop at the "edge" of the screen:

E	Home cursor and clear the screen (equivalent to ESCAPE H followed by ESCAPE J).
H	Home the cursor — move it to the top left of the screen.
J	Clear to the end of the screen; includes cursor position.
K	Clear to end of line; includes cursor position.
F	Enter graphics mode. 33 graphics characters may be displayed.
G	Exit graphics mode (not ESCAPE J as indicated on p. 112).
Ylc	Direct cursor addressing: l and c may range from 1 to 25, 80.

All of the codes above are common to the VT52 terminal manufactured by Digital Equipment Corporation. The only VT52 escape sequence missing is ESCAPE Z (identify terminal).

L	Insert line: the cursor line and lines below are scrolled down one line, the current line is blanked and the cursor placed in column 1.
M	Reverse of above: current line is deleted, subsequent lines are scrolled up, bottom line is cleared, & cursor moved to column 1 of current line.
l	(lower case L): Erases current line, without deleting it, cursor moved to column 1.
o	Erase from start of current line up to but not including the cursor position, cursor does not move.

The Heath/Zenith codes to turn reverse video on and off, **ESCAPE p** and **ESCAPE q**, are NOT supported by the Zorba. Software which uses those codes, but which is otherwise compatible with the Zorba, will execute on the Zorba without highlighting — the codes will be ignored.

Additional or different escape codes may be supported by enhancements or substitutions. It is possible, for example, to make the Zorba emulate other terminals (e.g. Kaypro) by altering the BIOS.

*[Reproduced from the **Oracle of ZEUS**, the newsletter of the independent Zorba Equipment Users' Society.]*

FOG MEMBER LIBRARY NEWS

Disk Library Conversion Nearing Completion

by Gale Rhoades

Jack Brown, Roy Robinson, John Scott, and several other members have been hard at work these past three weeks. Their goal is to complete the conversion of the old Disk Library (FOG/APP, FOG/UTL, FOG/KAY, FOG/EX1, etc.) by the time you read this.

We have no longer have the old disks available. Where possible (when we are fairly certain which programs you selected the disk/s for), we will substitute disks from the new FOG-CPM section; otherwise, we will send you a note to clarify matters before shipping disks.

The printed Library Directory of the old library sections is no longer available. A new one will be printed as soon as funding can be arranged. In the interim, we will have a listing available on disk. Because of the size of the FOG-CPM section, the listings now takes two disks (CPM-CAT.001 and .002). The listings are broken into segments. 001-025.TXT is the listing of FOG-CPM.001 through .025, 026-050.TXT is the listing for FOG-CPM.026 through .050, etc. These listings are ready to be printed with NSWEEP, WordStar, or other word processing software. Price of the catalog disks are $4 each when ordered alone, $3 each when ordered with 9 or more other disks.

Descriptions of these new disks will be in this column on a space available basis for the next several months. The disks will be available as quickly as we can get them copied. (Got some time to volunteer? We've lots of disks in need of copying — we need over 100 copies of each disk added to the library before we can ship to the A.M.O. groups, the SysOps, and members ordering directly from the office.)

FOG-CPM.047 is the first of these "conversion" releases. Many of the programs have been updated with the most recent versions. The programs have been grouped so that Kaypro programs are together, Osborne Executive programs are together, Lobo MAX-80 programs are together, etc.

Each disk has a revision date. This allows older versions to be replaced by newer versions as they become available. This will reduce the number of disks in the library and will permit members to recognize updates easily. Each month, we will release a list of programs which have been updated.

I would like to take this opportunity to remind some members that many of the programs in the library are "user-supported" software. The author/s have said "Here, try this program. If it works for you and you would like to see more software like this, please send me $$$$$ (the amount varies)

RUN THE NUMBERS

All about spreadsheets.

An Easy Mortgage-Amortization Table in SuperCalc

by Francis E. Voermans

For a friend, who is a real estate broker, I concocted on my SuperCalc an easy mortgage-amortization table which I'd like to share with members who might be interested. Figure 1 shows the formulas:

Figure 1

```
  |  A ||         B         ||         C         ||         D         ||      E      |
 1|MORTGAGE AMORTIZATION TABLE
 2|--------------------------
 3|                .095  Interest           (Variable input)
 4|                  36  No. of Months      (Variable input)
 5|                6500  Principal          (Variable input)
 6|                 B12  Payment per Month
 7|          B4*B12-B5  Total Interest
 8|  ----------------------------------------------------------------------------
 9|      (1+B3/12)^B4  (Formula 1)
10|              1/B9  (Formula 2)
11|   (B3/12)/(1-B10)  (Formula 3)
12|            B5*B11  (Result)
13|  ----------------------------------------------------------------------------
14|   Pmt      Balance of               Total          Interest        Principal
15|     #       Principal             Payment           portion          portion
16|
17|     1              B5                 B12       B17*(B3/12)          C17-D17
18| A17+1         B17-E17                 B12       B18*(B3/12)          C18-D18
19| A18+1         B18-E18                 B12       B19*(B3/12)          C19-D19
20| A19+1         B19-E19                 B12       B20*(B3/12)          C20-D20
21| A20+1         B20-E20                 B12       B21*(B3/12)          C21-D21
22| A21+1         B21-E21                 B12       B22*(B3/12)          C22-D22
23| A22+1         B22-E22                 B12       B23*(B3/12)          C23-D23
24| A23+1         B23-E23                 B12       B24*(B3/12)          C24-D24
25| A24+1         B24-E24                 B12       B25*(B3/12)          C25-D25
26| A25+1         B25-E25                 B12       B26*(B3/12)          C26-D26
27| A26+1         B26-E26                 B12       B27*(B3/12)          C27-D27
28| A27+1         B27-E27                 B12       B28*(B3/12)          C28-D28
29| A28+1         B28-E28                 B12       B29*(B3/12)          C29-D29
30| A29+1         B29-E29                 B12       B30*(B3/12)          C30-D30
31| A30+1         B30-E30                 B12       B31*(B3/12)          C31-D31
32| A31+1         B31-E31                 B12       B32*(B3/12)          C32-D32
33| A32+1         B32-E32                 B12       B33*(B3/12)          C33-D33
34| A33+1         B33-E33                 B12       B34*(B3/12)          C34-D34
35| A34+1         B34-E34                 B12       B35*(B3/12)          C35-D35
36| A35+1         B35-E35                 B12       B36*(B3/12)          C36-D36
37| A36+1         B36-E36                 B12       B37*(B3/12)          C37-D37
38| A37+1         B37-E37                 B12       B38*(B3/12)          C38-D38
39| A38+1         B38-E38                 B12       B39*(B3/12)          C39-D39
40| A39+1         B39-E39                 B12       B40*(B3/12)          C40-D40
41| A40+1         B40-E40                 B12       B41*(B3/12)          C41-D41
42| A41+1         B41-E41                 B12       B42*(B3/12)          C42-D42
43| A42+1         B42-E42                 B12       B43*(B3/12)          C43-D43
44| A43+1         B43-E43                 B12       B44*(B3/12)          C44-D44
45| A44+1         B44-E44                 B12       B45*(B3/12)          C45-D45
46| A45+1         B45-E45                 B12       B46*(B3/12)          C46-D46
47| A46+1         B46-E46                 B12       B47*(B3/12)          C47-D47
48| A47+1         B47-E47                 B12       B48*(B3/12)          C48-D48
49| A48+1         B48-E48                 B12       B49*(B3/12)          C49-D49
50| A49+1         B49-E49                 B12       B50*(B3/12)          C50-D50
51| A50+1         B50-E50                 B12       B51*(B3/12)          C51-D51
52| A51+1         B51-E51                 B12       B52*(B3/12)          C52-D52
53|               B52-E52
54|TOTALS                        SUM(C16:C53)   SUM(D16:D53)   SUM(E16:E53)
```

The three variables (of any loan) are Interest, Period and Principle, and they are on B-3, B-4 and B-5. The formula to compute the monthly payment was taken from the ***Ellwood Tables for Real Estate Appraising and Financing***, published by the American Institute of Real Estate Appraisers.

The formula itself is quite complicated, but I managed to break it down into three formulas, which are on B-9, B-10 and B-11, while B-12 gives the result of these formulas.

To get the print-out by month for the total period, rows 17 and 18 have to be put in by hand then the formulas on row 18 can be replicated till whatever row, depending on the number of months the loan is supposed to last. The replication should be done by column as column C has the "No Adjust" option and column D the "Ask for Adjust" option of the "replicate" function.

There is one small hitch! When new variables have been put in, everything is automatically recomputed and shows up in its new values, except for B-6 and B-7 as these refer to B-12. Here one has to press the ! key for readjustment.

Because of the limited memory of the Osborne (64K), the maximum that can be computed is a 15 year (180 months) loan.

When making a printout the row and column designation can be taken out and the printout should be done in two parts: A1:E8 and then A14:E??, where ?? is the end of the table.

I hope somebody can use this table, but they have keep in mind that there will be a small difference in the Total Payment and Total Interest, because of the many digits behind the decimal point in the three formulas. In the sample the difference is $0.15 which the banks normally add to the first payment and for practical purposes can be ignored.

• • • • • • •

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Sending Manual Printer Setup Codes from SuperCalc

by John Daggan

There are two ways to send setup codes to your printer when using SuperCalc. The first way is to run the INSTALLS.COM program and specify which codes you want SuperCalc to send to the printer. The problem with this method is that you're stuck with just one set of printer commands for every SuperCalc worksheet. What if you want to change the setup string while you're working on a worksheet?

There is a way to do this. Start the procedure for printing out a worksheet by typing: **/ODALL**↵. Now SuperCalc says `Enter Device: (P)rinter, (S)etup, (C)onsol, or (D)isk.` Type an **S**. Now you'll get another menu, which allows you to change the page (L)ength, (W)idth, send data to (P)rinter or send manual (S)etup codes to the printer. Type **S** once again.

Now here comes the tricky part. SuperCalc now says `Enter codes (CR when done)`. With a printer manual handy (I'm using an Epson RX-80 for this example), find the page that has "Escape Codes" listed. The first escape code you should send is the printer reset.

First hit the escape key <**ESC**>, then an @. *[Nothing will show on your screen.]* If your Epson is like mine, you'll hear it burp. Then, say you want Elite size print. Enter <**ESC**> and **M**. And if you also want eight lines per inch, enter <**ESC**> **0**. Now press ↵.

The main setup menu is still in front of you. Since you've sent the escape code for eight lines per inch, you should change the page length to 88 (11" x 8 lines per inch). Type an **L**, enter 88 and press ↵. Now type **P** to start printing out your worksheet the way you want to see it!

• • • • • • •

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Library Notes from page 56

so I can afford to continue writing programs." I encourage all users to send this small fee to the authors. If you discover that the address listed in the program is no longer correct, let the FOG staff know. If you know the correct address, include that information as well. We will update the documentation file (and, if possible, list a correct address) on the disk. If we have a new address, we will also list it in this column.

We all enjoy our computers but they would be little more than expensive doorstops without software so let's encourage more CP/M programmers!

-**FOG/CPM.047**: Executive and CPM+ specific programs

```
//CPM047.DOC:
/JUN/86 .   :
APL      .CHR:  APL language character set
APL      .DOC:  Installation instructions for APL.CHR and APL.OKI
APL      .OKI:  Downloadable character set for Okidata 92
APLCHARS.DOC:  More info on the APL.CHR set
BOLDFACE.CHR:  A new character set for the Exec.
BOLDINVR.CHR:  The same as BOLDFACE.CHR, but in inverse video
CWOOODSK.DOC:  Various info on .CHR files, and the Exec in general
DATE     .MAC:  Used by EXECLOCK
DOCINDEX.DOC:  Index of Executive Documentation Manuals
ETERM    .COM:  Small, fast terminal program for the Executive
ETERM    .DOC:  Ideal for quick conversational links
EXCLOCK  .COM:  Provides an on-screen clock for the Executive
EXCLOCK  .DOC:  Lots of info on creating an RSX (as used in EXECLOCK)
EXCLOCK  .MAC:  M80 source code for EXECLOCK
EXCLOCK  .SUB:  Example of .sub file to create EXECLOCK using M80
EXCLOCKR.MAC:  M80 source code for EXECLOCK RSX
EXECCHR  .DOC:  Info on EXSERIFS and GREEK .CHR files
EXSERIFS.CHR:  Fancy screen character set
FUNNY    .CHR: .Executive character set
GERMAN   .CHR:  Executive character set
GERMAN   .DOC:  For use with Silver-Reed wheel "6021"
GREEK    .CHR:  Executive character set
GREEK14  .FON:  Using Fancy Font & Epson, will print German characters
INVERTED.CHR:  Inverse character set for the Executive
ROMBANK  .MAC:  Used in EXCLOCK.MAC
SCRIPT   .DOC:  Installation instructions for SCRIPT.FIL
SCRIPT   .FIL:  Executive character set
SETDEFLT.COM:  Allows you to set CPM+ default disk, drive search, etc
SETDEFLT.DOC:  Many options can be changed in the CPM+ SCB
SETDEFLT.PLI:  PLI source code for SETDEFLT
TIME     .ASM:  RSX to set or read internal clock
TIME     .COM:  Read CPM+ clock
TIME     .MAC:  Used by EXECLOCK.MAC
TIME     .RSX:  RSX to set or read internal clock
VIDBANK  .MAC:  Used in EXECLOCK.MAC
```

-**FOG/CPM.048**: Osborne Executive Specific programs

```
//CPM048.DOC:
/JUN/86 .   :
BUFEXEC  .COM:  A modem program that uses CompuServe protocol
BUFEXEC  .DOC:
BUFEXECR.COM:  Another version of the BUFEXEC modem program
BUFEXECR.DOC:
EXAUTO   .ASM:  This can be assembled to replace EXECST
EXECESAY.TXT:  Info on SNAPSHOT and TIME (on FOG/CPM.047)
EXECSCRN.COM:  Menu driven-- Sets screen attributes
EXROM11  .COM:  Reads the Executive ROM from Bank 8 to a disk file
EXROM11  .DOC:
EXTONE1  .ASM:  Demonstrates the noise generator in the Executive
EXTONE1  .COM:
FNKEYS   .COM:  V 2.1 Allows you to change function & arrow keys
FNKEYS   .DOC:  Extends standard 256 bytes to 512 bytes available
FREE30   .DOC:  Discussion on how to implement correct space remaining
GRAFTEST.BAS:  Short demo to show screen graphics on Executive
KEYBD    .COM:  V 2.0 Keyboard re-definition program
KEYBD    .DOC:
KEYS     .COM:  Prints function keys to the screen and printer
KEYS     .DOC:
KEYS     .MAC:  MAC source for KEYS
NULL     .ASM:  Create a 0K file for use with catalog programs, etc
NULL     .COM:
OTHELLO  .BAS:  Mbasic game using Executive screen graphics
PEEK     .ASM:
PEEK     .COM:  Display file related BDOS accesses in CPM+
PEEK     .DOC:  A program debugging tool
PEEKBDOS.ASM:  Used with PEEK.ASM to assemble PEEK.COM
RSXSEED  .MAC:  RSX outline to allow you to build your own RSX
SAVKEY   .ASM:
SAVKEY   .COM:  Save arrow and function key settings to a file
SET/SAV  .DOC:  Switch between key settings using SAVKEY and SETKEY
SETKEY   .ASM:
SETKEY   .COM:  Loads function & arrow keys from SAVKEY file
SNAPSHOT.ASM:
SNAPSHOT.COM:  Screen dump routine (see also PRTSCRN — FOG/CPM.038)
VIDEO    .BAS:  Demo of Executive video attributes - menu driven
ZEROMAKR.BAS:  MBasic source code
ZEROMAKR.COM:  Create a 0K file for use with catalog prgms, etc.
ZEROMAKR.DOC:  Inserts the dash (-) character automatically
```

-**FOG/CPM.049**: Morrow Microdecision programs

```
//CPM049.DOC:
/JUN/86 .   :
B3MM300  .COM:  BYE3 set up for MM300 modem
B3MM300  .TXT:
DOUBLE1  .COM:  For MD1 DS conversion
DOUBLE2  .COM:  For MD2 DS conversion
DOUBLIT  .DOC:  How to install DS drives in MD1 or MD2
DRAW     .COM:  Screen graphics for ADM-20 or upgraded MDT-20
DRAW     .DOC:
DRAW     .PQS:  Squeezed Turbo Pascal source code
MD19200  .COM:  Sets printer/modem port to 19,200 baud
MD19200  .PAS:
MDBITS   .COM:  Replacement for MMD SETBAUD program
MDBITS   .PAS:
MDPRT    .ASM:  Redefines LST: device as the AUX port of your terminal
MDSET    .COM:  Sets serial port speed on MD1 only
MDSET    .DOC:
MM300MOD.DOC:  MM300 modem documentation
NORMAL   .COM:  Sets bright letters on dark background on FREEDOM 50
PATCH-IT.AQM:  Patches Morrow-supplied WS 3.0 and Correct-It to
PATCH-IT.COM:    work together from the No-File menu
PATCH-IT.DOC:
PATCH1   .SUB:  Submit file for MD1 DS drive conversion
PATCH2   .SUB:  Submit file for MD2 DS drive conversion
PBOOT    .COM:  Simple XMODEM protocol receive program for FREEDOM 50
PBOOT2   .PAS:
REV/NORM.DOC:  Instructions for REVERSE and NORMAL
REVERSE  .COM:  Sets dark letters on bright background on FREEDOM 50
SAMPLE   .DAT:  Sample of mixed text & graphics made with DRAW
VIRT     .ASM:  Patch used in BYE to set MAXDRV correctly
WSKEYS   .ASM:  Customize WS for MDT20 keyboard
Z2PATMD  .ASM:  Patch MD bios ver1.3 for ZCPR2 features
Z2PATMD  .HEX:
ZCPR2    .HEX:
ZCPR2    .MMD:  Installation info for ZCPR2 on Morrow (ROM 1.3)
ZCPR2-MD.FIX:  Last minute change in installation of ZCPR2
ZCPRHDR  .LIB:  Unique header for MMD  ZCPR2 installation
```

-**FOG/CPM.050**: Morrow Microdecision programs

```
//CPM050.DOC:
/JUN/86 .   :
AUTOFORM.PIL:  PILOT program to format, sysgen, etc
AUTOSTRT.ART:  How to change the AUTO? message in CP/M
BAZICDAT.ART:  Convert BAZIC files to ASCII
CPMRBOUT.ART:  Convert the delete key to a rubout key
DATATRAN.ART:  Transfer data between computers using MDM7
LDR      .COM:  ZCPR3 loader program
MAKE     .SUB:  Sample file to assemble ZCPR3 bios patch
MD-SMKEY.DOC:  How to adapt SMARTKEY II for various terminals
MD2DSK   .TXT:  Add 2 additional drives to an MD2
MD2TOMD3.FIX:  More info and bug fixes on MD2 to MD3 conversion
MD3SETUP.MAC:  Alternative to MD3 Rev2 SETUP program
MDJUMPER.TXT:  Various jumper configurations for serial port #2
```

```
PILOTINT.ART:  Info on using PILOT
STARTUP .COM:  ZCPR2 utility program
SWTCHBOX.ART:  Making a printer/modem switch
SYS     .ENV:  ZCPR3 file
SYS     .FCP:  ZCPR3 file
SYS     .NDR:  ZCPR3 file
SYS     .RCP:  ZCPR3 file
SYSENV  .LIB:  ZCPR3 file
SYSFCP  .LIB:  ZCPR3 file
SYSNDR  .LIB:  ZCPR3 file
SYSRCP  .LIB:  ZCPR3 file
TERMCHNG.ART:  Adapting any terminal to the MD2
Z3SSK   .R21:  ZCPR3 file
Z3BASE  .LIB:  ZCPR3 file
Z3HDR   .LIB:  ZCPR3 file
Z3MD-SSK.WS :  ZCPR3 installation on MD1 2 or 3
Z3MDINFO.TXT:  ZCPR3 information file
Z3PATMD .ASM:  ZCPR3 bios patch for Morrow bios rev 1.6 or 2.3
ZCPR3   .HEX:  ZCPR3 file
ZCPR3   .INS:  ZCPR3 file
```

-FOG/CPM.051: Programs for Kaypro computers

```
-FOG/CPM.051:  Programs for Kaypro computers
//CPM051.DOC:
/JUN/86 .   :
FLYKPRO .COM:  A "flight simulator" with graphics
FLYKPRO .DOC:
GAMES   .COM:  A menu-driven collection of games
GAMES   .DOC:
K10BAKUP.COM:  A simple file backup utility
K10BAKUP.DOC:
KP-CLS  .COM:  Clear the Kaypro screen
KP-TYPER.COM:  Type directly to your printer
KP-TYPER.DOC:
KPCPM   .BUG:  Documents ^P bug in Kaypro bios
KPCPM   .COM:  Automatic fix for ^P bug
KPCPM   .DOC:
KSTRO484.COM:  Define 8 SF Keys and Macros
KSTROK10.COM:  Define 8 SF Keys and Macros
KSTROKE2.COM:  Define 8 SF Keys and Macros
KSTROKES.ASM:  Source code for KSTROKES
KSTROKES.DOC:
NU-LABEL.BAS:  CBasic label making program for reverse video
               machines
NU-LABEL.COM:
NU-LABEL.DOC:  Prints 1-up labels and displays it on screen
OLDLABEL.COM:
OLDLABEL.DOC:  Label program for non-reverse video machines
```

-FOG/CPM.052: Lobo Max-80 programs

```
//CPM052.DOC:
/JUN/86 .   :
MAX12   .NSL:  Various newsletter articles
MAX13   .NSL:  Various newsletter articles
MAX14   .NSL:  Various newsletter articles
MAX15   .NSL:  Various newsletter articles
MAXLETTR.DOC:
MEMTEST .COM:  Memory tester program
MEMTEST .DOC:
READZCPR.DOC:  ZCPR installation instructions
SETIO   .COM:  Set serial port A & B configuration
SETIO   .DOC:
SETIO   .MAC:
TURNKEY .COM:  Allows you to specify a startup command
TURNKEY .DOC:
TURNKEY .MAC:
VFUZZ/SM.DOC:  Programmable character set information
VFUZZY  .BAS:  Character set demo
VSMALL  .BAS:  Character set demo
WSKB    .COM:  Configure MAX arrow keys for WS arrows
WSKB    .DOC:
WSKB    .MAC:
XFUNC   .ASM:  Configure F3 and F4 keys
XFUNC   .DOC:
ZCPR    .ASM:  ZCPR1 for Lobo Max-80
ZCPR    .DOC:  ZCPR installation instructions
ZCPR    .HLP:  On-line help file for use with HELP.COM
ZCPR    .MSG:  ZCPR release notice
ZCPR-MAX.HEX:  Assembled ZCPR file
```

-FOG/CPM.053: Banner printing programs

```
//CPM053.DOC:
/JUN/86 .   :
CHARFLIP.BAS:  For modifying FONTSY font source files
CHARFLIP.COM:
CLARE   .FNT:  Sample font
CLS     .DAT:
FONTCODE.BAS:  Creates encoded data files for FONTSY
FONTCODE.COM:
FONTSY  .BAS:  Banner printing program that uses multiple fonts
FONTSY  .COM:
FONTSY  .DOC:
GOTHIC  .FNT:  Sample font
HEADLINE.ASM:  Prints large titles on page
HEADLINE.SUB:
HERON   .FNT:  Sample font
HL      .DOC:  Documentation for HEADLINE
HL080   .COM:  HEADLINE for 80 col printer
HL132   .COM:  HEADLINE for 132 col printer
KIWI    .FNT:  Sample font
RAVEN   .FNT:  Sample font
```

-FOG/CPM.054: Various CP/M utilities

```
//CPM054.DOC:
/JUN/86 .   :
APPEND  .ASM:
APPEND  .COM:  Copy file1 to the end of file2
APPEND  .DOC:
BDOSLOC .ASM:  Used to locate addresses for ZCPR integration, etc
BDOSLOC .COM:  Prints base page addresses for BDOS and CCP
EZCPR   .COM:  An easy method of setting up ZCPR functions
EZINST  .HLP:  Detailed help on installing EZCPR
GUARD   .COM:  EZCPR support file
LASM    .COM:  Linking Assembler (can replace ASM.COM)
LASM    .DOC:
LSWEEP  .DOC:
LSWEEP13.COM:  "Sweep" utility for.LBR files
MAKBATCH.COM:  Make a batch run .com file without SUBMIT
MAKBATCH.DOC:
PATCHCPM.ASM:  Make various automatic changes to standard CCP
PATCHCPM.HLP:   (this is a predecessor program to ZCPR)
SCRAMBLE.MSG:  Info. on SCRMBL21
SCRMBL  .COM:  Simplified update for SCRMBL21
SCRMBL  .DOC:
SCRMBL  .MAC:  M80 compatible Z80 code
SCRMBL21.ASM:
SCRMBL21.COM:  Encrypts/decrypts files with user supplied password
SPLIT   .COM:  Splits a file into smaller chunks
SPLIT   .DOC:
SYS215  .COM:  EZCPR support file
WIZ     .COM:  EZCPR support file
```

-FOG/CPM.055: Various CP/M utilities

```
//CPM055.DOC:
/JUN/86 .   :
/       .ASM:
/       .COM:  Allows multiple commands on a line
/       .DOC:
@       .COM:  An Online Expression Evaluator in decimal & hex
@       .DOC:   (better known as a calculator)
CALL-CPM.COM:  Menu-driven program to learn how CP/M calls work
CALL-CPM.DOC:
COMPARE .ASM:  MAC source for file compare program
COMPARE .COM:  Compares two files and reports if different
COMPARE .DOC:
COMPASC .COM:  ASCII file compare program
COMPBIN .COM:  BINARY file compare program
CRCK4   .ASM:  MAC source for CRC program
CRCK4   .COM:  Perform Cyclic Redundancy ChecK to verify files
CRCK4   .DOC:
DIAL    .COM:  Automatic dialing program for SmartModem
DIAL    .DOC:
```

```
DUPUSR21.ASM:
DUPUSR21.COM:  Create duplicate directory entry in other user area
HP      .COM:  Programmer's calculator for CP/M
HP+     .COM:  Special memory resident version for CPM+ only
HP-HP+  .DOC:  RPN logic in Hex, Decimal, Binary and Character
INUSE11 .ASM:
INUSE11 .COM:  Prints message on screen and locks keyboard
INUSE11 .DOC:   Requires password to further use computer
QUICKSET.ASM:  File attribute bit set program (see QS on FOG/CPM.005)
TYPWRYT .ASM:
TYPWRYT .COM:  Use your computer and printer like a typewriter
TYPWRYT .DOC:   Requires a daisy-wheel printer
UMPIRE  .COM:  Tests all available memory in TPA
UMPIRE  .DOC:
UNSPOL  .DOC:
UNSPOL33.COM:  Send a file to the printer in background mode
```

-FOG/CPM.056: Supercalc applications

```
//CPM056.DOC:
/JUN/86 .   :
CASHFLW .CAL:  Estimate net cash flow from rental property
CASHFLW .DOC:
ELNA    .CAL:  Stock portfolio analysis template (SC 1.05)
ELNA    .DOC:
ELNAEX  .CAL:  Stock portfolio analysis template (SC 1.05)
TAXSHLTR.CAL:  Computes tax benefits from real estate (SC 1.12)
TAXSHLTR.DOC:
TAXTMPL .DOC:
TAXTMPL1.CAL:  1983 tax templates (SC2)
TAXTMPL2.CAL:  1983 tax templates (SC2)
TAXTMPL3.CAL:  1983 tax templates (SC2)
TAXTMPL4.CAL:  1983 tax templates (SC2)
TAXTMPL5.CAL:  1983 tax templates (SC2)
TAXTMPL6.CAL:  1983 tax templates (SC2)
TAXTMPL7.CAL:  1983 tax templates (SC2)
```

-FOG/CPM.057: dBase II programs

```
//CPM057.DOC:
/JUN/86 .   :
ADDMILES.CMD:  Used with EXPENSE.CMD
ADDXPENS.CMD:  Used with EXPENSE.CMD
ALTER   .CMD:  Part of CHEX.CMD
CHEX    .CMD:  Checkbook management program
CHEX    .DOC:   Menu driven with 2 different checkbooks
CHKPRINT.CMD:  Part of CHEX.CMD
CHXA    .DBF:  Part of CHEX.CMD
CHXB    .DBF:  Part of CHEX.CMD
CHXLOAD .CMD:  Part of CHEX.CMD
DEMGRAPH.CMD:  Part of DEMO.CMD
DEMO    .CMD:  Menu of different dBase demo programs from
               dBase RCPM
DEMOCHC .CMD:  Part of DEMO.CMD
DFORMAT .COM:  Align and indent your CMD files
DFORMAT .DOC:
DSTRIP  .COM:  Makes CMD files compact but leaves comments
DSTRIP  .DOC:
EDIT    .CMD:  Part of CHEX.CMD
EDITEXP .CMD:  Used with EXPENSE.CMD
EXPENSE .CMD:  Menu driven program to keep track of mileage
               expenses
EXPENSE .DOC:
EXPENSES.DBF:  Used with EXPENSE.CMD
FINDCOD .CMD:  Part of CHEX.CMD
FINDNAM .CMD:  Part of CHEX.CMD
GETXTIME.CMD:  Get date & time from Exec memory & set dBase date
INDXA   .NDX:  Part of CHEX.CMD
INDXB   .NDX:  Part of CHEX.CMD
KANCELS .CMD:  Part of CHEX.CMD
MEMVAR  .MEM:  Part of DEMO.CMD
MENU    .CMD:  Part of CHEX.CMD
MILEAGE .DBF:  Used with EXPENSE.CMD
MONTHREP.CMD:  Used with EXPENSE.CMD
PORTCOMP.DBF:  Database file indexing the Portable Companion
                sorted on the article category
RECOVER .COM:  Will recover trashed dBase II data files
RECOVER .PAS:  Pascal source code for RECOVER
RULEDEMO.CMD:  Part of DEMO.CMD
SELECT  .CMD:  Part of CHEX.CMD
SQRT    .DBF:  Part of DEMO.CMD
SQRT    .DOC:  Part of DEMO.CMD
SQRTDEMO.CMD:  Part of DEMO.CMD
TPCDIREC.DBF:  Database file indexing the Portable Companion
                sorted on software type field
TPCDIREC.FRM:  Format file for printed output from TPCDIREC
UGRAPH  .CMD:  Part of DEMO.CMD
UGRAPH  .DBF:  Part of DEMO.CMD
UGRAPH  .DOC:  Part of DEMO.CMD
UNIQUE22.CMD:  Utility to purge duplicate records (CMD file is
UNIQUE22.DOC:   encoded so you can't list it)
```

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FOR SALE

0-1 Osborne Software For Sale

Unused and with full documentation. WORD-PAC for $49.95; PERSONAL PEARL for $24.95; MODEM with software for 49.95; EXEC bundled software for $24.95. Price includes shipping and tax. Personal checks OK. John Brewer Electronics, 405 Grand Ave., Suite 210, South San Francisco, CA. 94080.

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$25 x 50% off for FOG members = $12.50

M.A.G.I.C Demo/Tutor - Disc & 13 p. Manual. Moving avgs.+ computerized trading Optimize buy/sells on stocks/funds etc. Unlimited runs on real data. Osborne, Kaypro, IBM. Add $1 shpg. + 6% CA tax. $WARE, Box 645, San Luis Rey, CA 92068

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Misc. For Sale

New 0-1 parallel printer cables = $30 each
New handle fan for 0-1 or Exec. = $40
16 issues of ***FOGHORN*** and 12 issues of ***Portable Companion***, dates mixed from '83 to '85 =$20 + postage for all 28 issues.

0-1 Software For Sale

2 copies Microlink $20 each
4 copies Personal Pearl $35
1 copy dBASE II $75
1 copy System Checker $20
1 copy Osboard, Osgraph, Osbrief $30
Add postage to prices

Neil Halava, Rt 1 Box 753, Mammoth Spring, AK 72554, (501) 625-7349.

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0-1 DD Drives For Sale

I am the owner of an Osborne 1 with a Nuevo 2x2 upgrade. I'm offering the two factory double-density drives, with ROM chips, and the board for sale. Asking $75 or best offer to the first taker. Larry P. Auerbach, 1697 Floresta Dr, Pt. St. Lucia FL 33452, (305) 878-7833 (answering machine).

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FOG MEMBER ANNOUNCEMENTS

Two Osborne 1's For Sale

Two Osborne 1 computers. Both blue case DD and one has the ScreenPac. One each monitor adaptor, printer cable, and fan. Extra software: SC2, dBASE II, Personal Pearl, TP2, TP ToolBox, much more. $700 for both, or split up. (218) 326 2619.

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For Sale

Osborne 1 with 23MB Trantor Hard Disk. Gray case, double density, 80/104 columns, JG Clock. Also includes 12" BMC monitor, 128K Quadram print buffer, 300 Baud UDS modem, and Technical Manual. Lots of software too, including WordStar 3.3, SuperCalc 2, dBASE II 2.43, LMI Forth, muMATH/muSIMP, TURBO Pascal 3.0, Aztec C, Rembrandt, Media Master, Presto!, Out-Think, Disk Doctor, CLIP, Microlink II, ManyKey, Home Accountant, SmartKey II+. $1600 or best offer. Call Roger at (703) 384-7468.

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PRODUCT ANNOUNCEMENTS

Inova is Now Inovatronics, Inc.

Inova has changed its name to Inovatronics, Inc. and to celebrate has lowered the prices on existing software and introduced some new packages.

Skeys, the multi-function software package for the Executive, is now $44.95. Skeys includes two calculators, 78 additional function keys, memory editor, typewriter emulator and more. WSV and MKR are included free.

WSV, a fast source code editor for the 0-1 and Exec, is now $29.95 and MKR, which allows you to edit your function keys and store them in .COM files, is $16.95. Keys, a junior version of Skeys for the Executive, is $19.95.

Contact Inovatronics, Inc., 11311 Stemmons Frwy, Ste 7, Dallas TX 75229, (214)241-9515.

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Delivery Problems?

Please refer to page 2 for the additional postage charges for First Class and non-U.S. delivery of ***FOGHORN***. **FOG** cannot be responsible for non delivery of copies sent bulk mail.

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FOG MEMBER MERCHANDISE

A decision on whether or not to discontinue the **FOG** T-shirts will depend on members' interest. These T-shirts are soft blue in color with the **FOG** logo in black and are Hanes 100% cotton. They are cut large to allow for shrinkage.

Sizes currently available are small (34-36) and medium (38-40). We are out of stock on the large and X-large sizes. The price is $7.50.

The printed **FOG** Library Directory (of the old library sections) is no longer available. A new one will be printed as soon as funding can be arranged. In the interim, we will have a listing available on disk. Because of the size of the FOG-CPM section, the listings now takes two disks (CPM-CAT.001 and .002). The listings are broken into segments. 001-025.TXT is the listing of FOG-CPM.001 through .025, 026-050.TXT is the listing for FOG-CPM.026 through .050, etc. These listings are ready to be printed with NSWEEP, WordStar, or other word processing software. Price of the catalog disks are $4 each when ordered alone, $3 each when ordered with 9 or more other disks. These disks are updated as new disks are released.

Each November issue (No. 2) of the ***FOGHORN*** contains an index to the previous volume. We maintain a full inventory of back issues, either as individual issues or as part of a "Best of" issue. See chart below for prices.

In September of each year we release a compilation of all issues of a previous volume. The **Best of Volume I** ($5) was released in 1984. This 54 page issue carries all the articles from Volume one and has no advertising. The 160 page **Best of Volume II** ($10 including Third Class postage) carries all the articles from October, 1982 through September, 1983.

The **FOG** Starter Disk is available in two formats. The double density version is on a single disk ($4); the single density version is on two disks ($4 per disk). The programs on these disks will change as better versions become available but will always be the programs needed to use other programs from the **FOG** Disk Library and **FOG** RCP/M systems. Please be sure to specify the format you require. In the event that no format is specified, we will ship Osborne double density.

Communication software (MDM740) is available for nearly every CP/M system. When ordering, please specify your system configuration. Modem disk is $4.

There is currently about 200 disks in the library. If you cannot obtain a copy through your local group or RCP/M, you may order directly from the **FOG** office. Your order **must** specify which **disk** you want by including the **FOG** Disk Library number.

We cannot fill special requests for specific programs from several disks. The price of the disks is $4 per disk for less than ten disks and $3 for 10 or more. Unless you include a note as to which format you want, we will ship either single or double density Osborne format. (In this case, format selection will be based on the total size of files contained in the release.)

FOG merchandise is now available to non-members. In each instance, the prices listed in this section should be doubled.

Prices of FOG merchandise

(Member prices listed; non-members please double.)

Individual ***FOGHORN*** Issues:	
Volume III (12 issues)	$1.50 ea.
Volume IV (12 issues)	$2.50 ea.
Volume V	$2.50 ea.
Best of Volume I	$5 ea.
Best of Volume II	$10 ea.
Library listing on disk (two disks)	$4 ea.
Single Density Starter Disk (two disks)	$8
Double Density Starter Disk (one disk)	$4
Modem disk (specify computer & modem)	$4
Copies of **FOG** Disk Library:	
less than ten disks	$4 ea.
ten or more disks	$3 ea.
FOG T-shirts (Sm or Med)	$7.50 ea.

Please total your order and add $1 for each $25 increment to cover shipping and handling. Send your payment to **FOG**, P. O. Box 3474, Daly City, CA, 94015-0474. You **must** include your membership (account) number. If shipment cannot be made, your payment will be returned or a refund will be sent.

If paying with MasterCard or Visa, be sure to include **both** the number and the expiration date. If paying with check, money order, or traveler checks, the shipping and handling charge will be waived. You should not send cash through the mail.

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FOG Membership Information

FOG, (a California corporation which has obtained its non-profit, tax exempt status from both the state and federal governments), is a users' group for persons using or interested in portable computers with related software. Most of the 15,000 members (from around the world) attend meetings at over 300 locations.

Dues in FOG are $25 per year. This entitles each member to a copy of either the ***FOGHORN*** (for CP/M users) or the new 16-/32- bit ***FOGLIGHT*** each month plus access to the disk library and the RBBS-RCP/M network systems. If you want both publications, add $19. A $1 discount on each publication applies for payment made by cash, check or money order.

Local group meetings are open to the public without charge although access to the disk library is restricted to the membership. The **FOG** Disk Library contains only software copyrighted for the public domain. Piracy (the copying of proprietary software) is strongly condemned.

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